Do Equity and Adequacy Court Decisions and Policies Make a Difference for At-Risk Students?

Longitudinal Evidence from New Jersey

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Abstract

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The question of whether increased funding pursuant to equity and adequacy court decisions has improved academic performance of at-risk students has sparked a lively and spirited debate. The landmark New Jersey case of *Abbott v. Burke* has been at the center of this debate.

In *Abbott*, the New Jersey Supreme Court held that students in twenty-eight (28) "special needs" districts must receive the same funding per pupil as students in the two highest socio-economic district factor groups in the State. 149 N.J. 145 (1997) (Abbott IV).[1] The question of whether the redistribution of State aid pursuant to Abbott IV has been efficiently and effectively managed has dominated public policy debates on education in New Jersey for the last two decades. The research questions are:

1. Did the court orders in Abbott v. Burke and subsequent reform policies adopted by the state in response to these orders increase funding and resources for economically disadvantaged students in the Abbott districts?

2. Have increased resources from Abbott v. Burke directly reached students in the classroom through enhanced instruction and student support services?[2]

[1] At the time of the Abbott IV decision, there were 28 districts identified as "special needs" districts. Currently there are thirty-one (31) Abbott districts, notwithstanding the fact that the State has over 500 school districts.

[2] Expenditures for student support services includes attendance and social work, guidance, health, psychological services, speech pathology, audiology, and other student support services.

3. Have Abbott v. Burke and ensuing State reform policies improved the academic performance of economically disadvantaged students as compared to analogous low socioeconomic and working-class students in districts that are not covered by the court decision?

4. Have a specific set of programs and reforms, including intensive early literacy programs in the elementary grades mandated by the State pursuant to Abbott v. Burke been effective for at-risk students in Abbott districts?

My study proceeds from descriptive analyses of revenues by source and expenditures per pupil by function to quasi-experimental models. My primary causal analyses involved applying a difference-in-differences (DD) approach using expenditures per pupil, student teacher ratio, state standardized assessment scores for fourth, eighth, and eleventh grade; SAT Verbal and Math district averages; and Graduating with the Class as outcomes.[3] My secondary causal analyses entailed a comparative interrupted time series (CITS) approach using state standardized assessment scores for eleventh grades, SAT scores, graduation rates, and post high plans as outcomes.

After an exhaustive study, wherein I built one of the most comprehensive district-level data bases in the nation and utilized over twenty-five measures, I find that Abbott v. Burke as an intervention has strong positive effects on education spending, student performance (in the early stages), and the learning environment. Abbott v. Burke had a strong positive effect on education spending from the time the seminal case was decided in 1997 up until to the present date.
The fact that Abbott districts are expending more on student support services per pupil in FY 17 than all other socio-economic districts across the State in raw dollars ($2,477) and on a percentage basis (12.7 percent) indicates that increased resources from Abbott v. Burke directly reach students through enhanced student support services.

[3] The DD estimation is a quasi-experimental design that makes use of longitudinal data from treatment and control groups to obtain an appropriate counterfactual to estimate a causal effect.

In New Jersey, increased funding and reform policies pursuant to the line of Abbott v. Burke court decisions has improved the academic performance of economically disadvantaged student in the Abbott districts as compared to low socioeconomic and working-class non-Abbott districts. The DD model suggests that Abbott IV increased the proficiency levels on fourth grade reading assessments of Abbott districts as compared to low socioeconomic districts between school year 1997-98 and 2001-02 ($p<0.01$).[4]

The DD model suggests that the IEL program increased fourth grade reading proficiency scores of the Abbott districts who were "high and medium implementers" of this policy as compared to low socioeconomic districts.[5] In a confirmation that the IEL program is effective, the DD model also implies that the IEL program increased fourth grade reading proficiency scores of the Abbott districts who were "low implementers" of this policy as compared to low socioeconomic districts.

Abbott IV increased the number of students in Abbott districts enrolling in two-year colleges as compared to low socioeconomic or working class districts between school year 1997-98 and 2001-02 means that Abbott students are more cognizant of the opportunities to attend college.

[4] The DD model also implies that Abbott IV increased the proficiency levels on fourth grade reading assessments of Abbott districts as compared to working class districts ($p<.05$).
[5] The DD model demonstrates that IEL programs instituted by the "high and medium implementers" of Orange, Pleasantville, Elizabeth, Jersey City, Union City, Asbury Park, Bridgeton, East Orange, Irvington, and Newark increased fourth grade math proficiency scores of students in those districts, as compared to low socioeconomic districts.

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Dedication

I dedicate this dissertation to my children and their spouses: Elizabeth; Dylan and Caitrin; Matthew; Daniel and Ali; and to their Mother Phyllis. I also dedicate this manuscript to my late Mom and Dad.

Chapter 1: INTRODUCTION and STATEMENT OF PURPOSE

1.1 Purpose

The question of whether increased funding pursuant to equity and adequacy court decisions has improved academic performance of at-risk students has sparked a lively and spirited debate. The landmark New Jersey case of *Abbott v. Burke* has been at the center of this debate.

In *Abbott*, the New Jersey Supreme Court held that students in twenty-eight (28) "special needs" districts must receive the same funding per pupil as students in the two highest socio-economic district factor groups in the State. 149 N.J. 145 (1997) (Abbott IV).[6] The question of whether the redistribution of State aid pursuant to Abbott IV has been efficiently and effectively managed has dominated public policy debates on education in New Jersey for the last two decades. In fact, the leading newspaper in New Jersey stated that, "It is abundantly clear by now that money is not the root problem in New Jersey's schools. We have pumped billions upon billions into struggling districts, and we've seen only modest improvements…The problem is not money. It is leadership and management." Star Ledger, January 7, 2011. On the other hand, students in Abbott districts showed demonstrable improvement from 2001 to 2005 on fourth grade math and reading tests, with the result that the Abbott to non-Abbott achievement gap seems to be closing in the 4th grade. (Goertz and Weiss, 2007).

The holding of Abbott v. Burke in 1997 that students in twenty-eight (28) "special needs" districts must receive the same funding per pupil as students in the two highest socio-economic district factor groups in the State is uniquely suited to applying quasi-experimental statistical

[6] At the time of the Abbott IV decision, there were 28 districts identified as "special needs" districts. Currently there are thirty-one (31) Abbott districts, notwithstanding the fact that the State has over 500 school districts.

methods such as differences-in-differences (DD) and fixed effects (FE) models in that the learning environment and student performance in Abbott districts can be compared to over 500 other districts within New Jersey.

The disparity in State aid between Abbott and non-Abbott districts is an explosive political issue that juxtaposes lower socioeconomic, working class, and middle-class districts against the more politically powerful urban Abbott districts. In 2009, one commentator stated that "While the Abbott districts enroll 21 percent of New Jersey children, they consume nearly one half of the state spending on elementary and secondary education." (Mead, 2009, p. 24). The percentage of state aid being earmarked for Abbott students remained relatively consistent ten years later, as the 23.5 percent of New Jersey students enrolled in the Abbott districts received $4.73 billion, or 54 percent of state aid in school year 2019-20.[7] (New Jersey State Department of Education, Office of School Funding 2020). The balance of state aid, $3.98 billion, or 46 percent is distributed across low socioeconomic non-Abbott districts, working-class districts, middle-class districts, upper middle-class districts and the highest socioeconomic districts.[8] (New Jersey State Department of Education, Office of School Funding 2020).

In Abbott districts, State revenues account for a disproportionate percentage of total revenues for education. For example, in FY 18 State revenues accounted for in excess of 80 percent of total revenues in nineteen Abbott districts.[9] (National Center for Education Statistics, Common Core of Data, School District Finance Survey (F-33) (FY 18). In stark contrast, State

[7] The State revenues for Abbott districts were $4,731,527,807 in FY 20, school year 2019-20.
[8] The State revenues for non-Abbott districts were $3,980,405,868, in FY 20, school year 2019-20.
[9] State revenues accounted for in excess of 80 percent of total education revenues in Asbury Park, Bridgeton, Burlington City, Camden, East Orange, Elizabeth, Irvington, Keansburg, Newark, Orange, Passaic, Paterson, Pemberton, Perth Amboy, Plainfield, Pleasantville, Trenton, Union City, Vineland, and West New York.

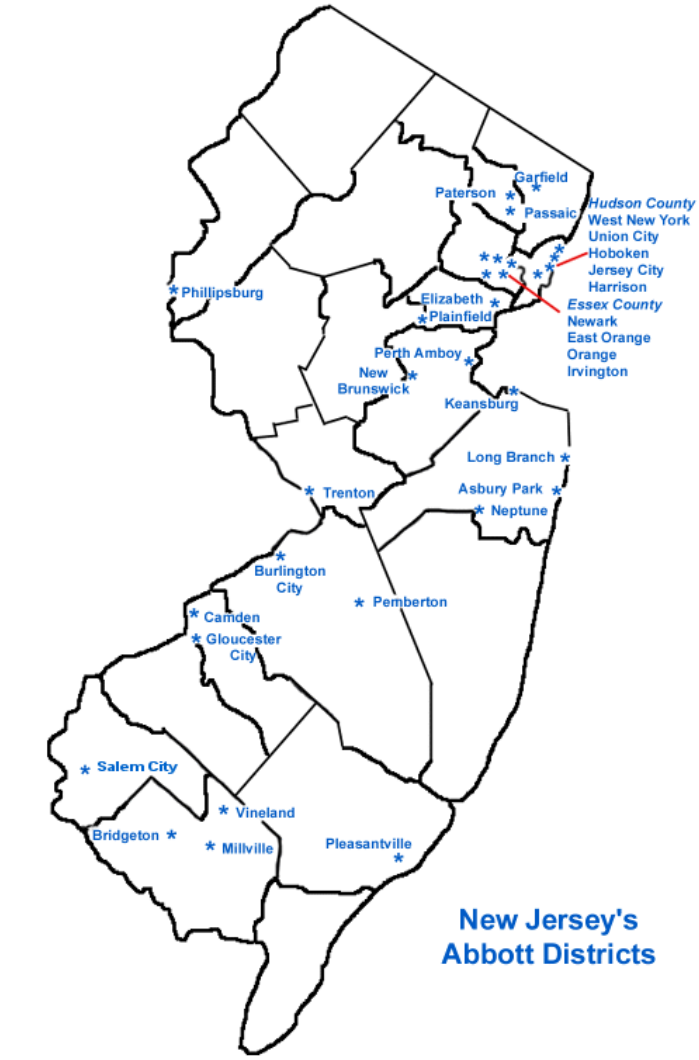
revenues do not comprise such a high percentage of total revenues for education in low socioeconomic non-Abbott districts, working class, nor middle-class districts.

The Abbott districts have the highest child poverty rate in the State. Gordon McInnes, the former Assistant Commissioner for Abbott Implementation testified that Abbott districts educated 51% of all New Jersey Students eligible for free and reduced lunches in 2005.[10] The Abbott districts consist of a combination of low income/ high need districts that had District Factor Group (DFG) A or B classifications[11] from the Department of Education and "urban" municipality classifications from the Department of Community Affairs, with the exception of Atlantic City. The sensitive equity issue revolves around the argument that the profound disparity in expenditures per pupil between Abbott districts and non-Abbott districts is also based solely on geography and political clout. In fact, Paul Tractenberg, one of the plaintiffs' attorney in Abbott stated the "We were focused on poor kids in urban districts. We didn't purport to represent poor kids wherever they happen to be. As we saw it, the problems in the urban districts were most pressing, and the cities had less resources to deal with them." Star Ledger, May 16, 1997.

[10] Testimony of Gordon McInnes before Senate Education Committee, Assistant Commissioner for Abbott Implementation, New Jersey Senate Education Committee, February 3, 2005.

[11] The DFG factor groups were first created in 1975 and were recalculated with the information gathered by the 2000 census. To calculate these groups New Jersey concentrates on three steps: first they calculate the SES score (socio-economic statistic) for each student, then they calculate the weighted amount for each student using 6 indicators about their origin and then New Jersey concentrates on how many students with these SES weighted scores are in each district.

Figure 1-1 Abbott Districts



Asbury Park
Bridgeton
Burlington City
Camden
East Orange
Elizabeth
Garfield
Gloucester City
Harrison
Hoboken
Irvington
Jersey City
Keansburg
Long Branch
Millville
Neptune Township
New Brunswick
Newark
Orange
Passaic
Paterson
Pemberton
Perth Amboy
Phillipsburg
Plainfield
Pleasantville
Salem City
Trenton
Union City
Vineland
West New York

In 2009, the Supreme Court purported to end the twenty-year Abbott litigation, holding that the School Funding Reform Act of 2008 (SFRA) had established a funding scheme based on the socioeconomic needs of each individual student, rather than geography, that satisfied the thorough and efficient education clause of the New Jersey constitution. Abbott v. Burke, 199 N.J. 140 (2009) (Abbott XX). The legislature was mandated to fully fund the 31 urban Abbott districts and 200 districts at the "adequacy" level called for by SFRA for the following three years, at which point the court would terminate its jurisdiction. Ibid.

However, following the Great Recession of 2008, the State reduced funding for all districts in New Jersey, including the Abbott districts. In 2011, the Supreme Court ordered New Jersey to restore SFRA funding in the amount of approximately $500 million to the urban Abbott districts, but took no stance regarding the cuts that all other districts in the state had endured. The court refused to include the rest of the state's school districts in the funding restoration order. Abbott v. Burke, 206 N.J. 332 (2011) (Abbott XXI).[12]

In 2017, the Supreme Court rejected former Governor Christie's motion in another Abbott v. Burke decision to freeze State aid at current levels while the State considered a new approach to school funding and to grant the Commissioner of Education unlimited authority to override terms of teacher collective bargaining agreements and teacher seniority layoff laws.[13] (for a detailed summary of the Abbott v Burke line of cases, see Chapter 2, *infra* at page 33).

[12] The relief was limited to students from Abbott districts for whom the Court had a historical finding of constitutional violation and for whom the court has had specific remedial orders in place through Abbott XX. In response to the Abbott decision in May of 2011, the legislature increased aid to school districts by $850 million, reversing the prior year's $820 million cut. The education funding included $450 million for the poorest districts, and another$400 million allocated to other schools within the state.

[13] On January 30, 2017 the Supreme Court ordered that Defendants' request for relief from certain aspects of collectively negotiated agreements and provisions of state law is denied without prejudice to defendants' right to file an action for relief in the trial court.

Prior to the Abbott equity line of cases, of the Massachusetts Supreme Court had held in *McDuffy v. Secretary of the Executive Office of Education*, that the education clause of the Massachusetts Constitution, Part II, c.5, §2, imposes an enforceable duty "on the magistrates and Legislatures of this Commonwealth to provide education in the public schools for the children there enrolled, whether they be rich or poor and without regard to the fiscal capacity of the community or district in which such children live." 415 Mass. 545, 621, 615 N.E.2d 516 (1993).[14]

Twelve years later, in Hancock v. Commissioner of Education, the Massachusetts Supreme Court held that the State took reasonable, appropriate action to "cherish the interests" of public school education under the Massachusetts constitution by establishing objective, data driven assessments of student performance and specific performance goals; and raising the levels of student performance in the poor districts and statewide. 443 Mass. 428 (2005). (emphasis added).[15]

In Rose vs. Council for Better Education, 790 S.W.2d 186 (Ky. 1989), the case that initiated the "adequacy" movement in funding litigations, the Kentucky Supreme Court held that an 'efficient' education is one that has as its goal the development in each and every child of seven capacities, including understanding of governmental processes to enable the student to

[14] The court further stated that "the Commonwealth has a duty to provide an education for all its children, rich and poor, in every city and town of the Commonwealth at the public school level, and that this duty is designed not only to serve the interests of the children, but, more fundamentally, to prepare them to participate as free citizens of a free State to meet the needs and interests of a republican government, namely the Commonwealth of Massachusetts." 415 Mass. at 606.

[15] The state also dramatically increased funding; closed the gap between high property-value-districts and low-property values districts by ½; and created and implemented standardized State-wide criteria of funding and oversight. 443 Mass. 428 (2005).

understand the issues that affect his or her community, state, and nation. Since Rose was decided, "adequacy efforts have been the hallmark of school finance suits." [16]

The question of whether there is a right to an education under the U.S. or state constitutions that prepares students to function freely in a democratic society and for competitive employment has continued to be litigated extensively for over half a century and continues down to the present time. The theory behind these cases is that if educators utilize increased resources resulting from Abbott v. Burke and other cases in an efficient manner, this will provide a meaningful educational opportunity for economically disadvantaged students. A meaningful educational opportunity is the cornerstone for citizens to successfully compete for jobs, make valuable contributions to, and participate in a democracy. CFE v. State 719 NYS 2d 475 (2001).[17]

This study evaluates the relationship between equity and adequacy court decisions and their actual outcomes for economically disadvantaged students, particularly focusing upon New Jersey. First, the study focuses on whether the Abbott v. Burke court orders and State reforms provided increased resources for students in Abbott districts, Second, the research concentrates on whether the increased funding reaches students in the classroom through the functions of

[16] The shift towards adequacy in school finance litigation provides educators and policymakers with an unprecedented opportunity to blend equality concerns with ongoing school improvement efforts stressing quality, accountability and higher academic standards. (Durfee, 2005). Some commentators have argued that the Rose "adequacy" standard is actually "equity plus" that provides a basis for more state funds if they are needed in some districts to provide an adequate education. This could also be described as "vertical equity" in which differently situated children "require different amounts of public school dollars in light of their differing needs, in contrast to the traditional "horizontal equity approach which has sought to provide different districts with relatively equal dollars per child." [16] (Briffault, 2005)

[17] A similar argument that all public school students have a right under the U.S. constitution to an education adequate to prepare them to be productive citizens, capable of effectively exercising their rights to vote and free speech, to serve on juries, to petition the government, and to participate in civic affairs was recently raised in Cook v. Raimondo (D.R.I.:1-18-civ-645). The 19 Plaintiffs have asked the U.S. District Court in Providence, Rhode Island to declare that all students "have the right to an education that prepares them to vote, to exercise their First Amendment rights." Education Dive, Rhode Island Student: I don't have civics education" accessed December 7, 2019.

instruction, instruction support, and student support. Third, this study evaluates the relationship between the Abbott v. Burke decisions and the academic achievement of economically disadvantaged students in the Abbott districts as compared to students in low socioeconomic and working-class districts. Fourth, the study examines whether a specific set of programs and reforms, including intensive early literacy programs in the elementary grades mandated by the State pursuant to Abbott v. Burke are effective for at-risk students in Abbott districts.

1.2 Research Questions

The research questions are:

1. Did the court orders in Abbott v. Burke and subsequent reform policies adopted by the state in response to these orders increase funding and resources for economically disadvantaged students in the Abbott districts?[18]

2. Have increased resources from Abbott v. Burke directly reached students in the classroom through enhanced instruction and student support services?[19]

3. Have Abbott v. Burke and ensuing State reform policies improved the academic performance of economically disadvantaged students as compared to analogous low socioeconomic and working-class students in districts that are not covered by the court decision?

4. Have a specific set of programs and reforms, including intensive early literacy programs in the elementary grades mandated by the State pursuant to Abbott v. Burke been effective for at-risk students in Abbott districts?

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[18] The first research question is best approached with several sub-questions:
S (1) How does funding to Abbott districts compare to the highest socioeconomic and upper middle class districts since Abbott v. Burke (1997)?
S (2) How does funding for Abbott districts compare to low socioeconomic non-Abbott districts, working class, and middle class districts?
S (3) What is the share of state funding for Abbott districts as compared to low-income non-Abbott districts, working, and middle class districts?

[19] Expenditures for student support services includes attendance and social work, guidance, health, psychological services, speech pathology, audiology, and other student support services.

I have developed four separate hypotheses that directly align with and respond to these four research questions. See infra, Chapter 2: CONCEPTUAL FRAMWORK and PREVIOUS LITERATURE, p. 30.

The concept of competitive effects is prominent in the literature on school choice, where it references the notion that schools exposed to competition for students will respond by improving the quality, efficiency, or reputation of their product (McEwan 2000, p. 103). But it also has deeper roots in the theory that local governments compete with one another to attract businesses and more affluent residents (Tiebout, 1956, 1961; Peterson, 1981). Thomas Nechyba recently stated that, "Charles Tiebout hypothesized that decentralized provision of public services (such as public schools) through local governments can result in efficient levels of such services." (Nechyba, 2020, p. 471). Although my data do not allow me to explore the mechanisms by which increased Abbott funding prompts competitive responses from socioeconomically similar districts, local officials in low socioeconomic and working-class districts appeared to respond to pressure from constituents by increasing current expenditures per pupil (see infra p.103) and by decreasing the student teacher ratio (see infra p.115).

1.3 Scholarly Significance of Study

This study responds to one commentator's statement that "There is no high-quality, rigorous longitudinal evaluation of the impact of New Jersey's K-12 level school reform efforts in the Abbott districts." (Mead, 2009, p. 22). This study also responds to the assertion of Julien Lafortune, Jesse Rothstein, and Diane Schanzenbach that "While the effects of the early reforms on school finance have been well studied, there is little evidence about the finance effects of more recent "adequacy" reforms or about the effects of any of these reforms on student achievement. (Lafortune, Rothstein, and Schanzenbach, 2018, p. 23).

The paramount question is whether the increased funding pursuant to the Abbott v Burke court decisions is associated with improved academic achievement. On one hand, commentators such as Hanushek, Lindseth, Evers, and Clopton assert that even the most adamant supporters of the Abbott "would be hard-pressed to claim that it has been very successful in improving academic achievement." (Hanushek and Lindseth, 2009, p. 165). In stark contrast scholars such as Goertz, Rebell, MacInnes, Resch, Sciarra, and Baker, cite evidence that the fourth-gradereading and math scores for students on state standardized tests in Abbott districts consistently improved over time. Furthermore, Lafortune, Rothstein, and Schanzenbach found that school finance reforms increased the absolute and relative achievement of students in low-income districts. (Lafortune, Rothstein, and Schanzenbach, 2018. p. 23). Jackson, Johnson, and Persico found that for children from low-income families, increasing per pupil spending yields large improvements in educational attainment, wages, family income, and reductions in the annual incidence of adult poverty. (Jackson, Johnson, and Persico, 2016, p. 212). Hyman found that students exposed to $1,000 more in spending per year experienced a 3.0 percentage point (7 percent) increase in college enrollment, and a 2.3 percentage point (11 percent) increase in degree receipt. (Hyman, 2017, p. 257). Finally, Candelaria and Shores found that seven years after reform, the highest poverty quartile in a treated state experienced a 6.8 to 11.5 percentage point increase in graduation rates. (Candeleria and Shores, 2019, p.47).

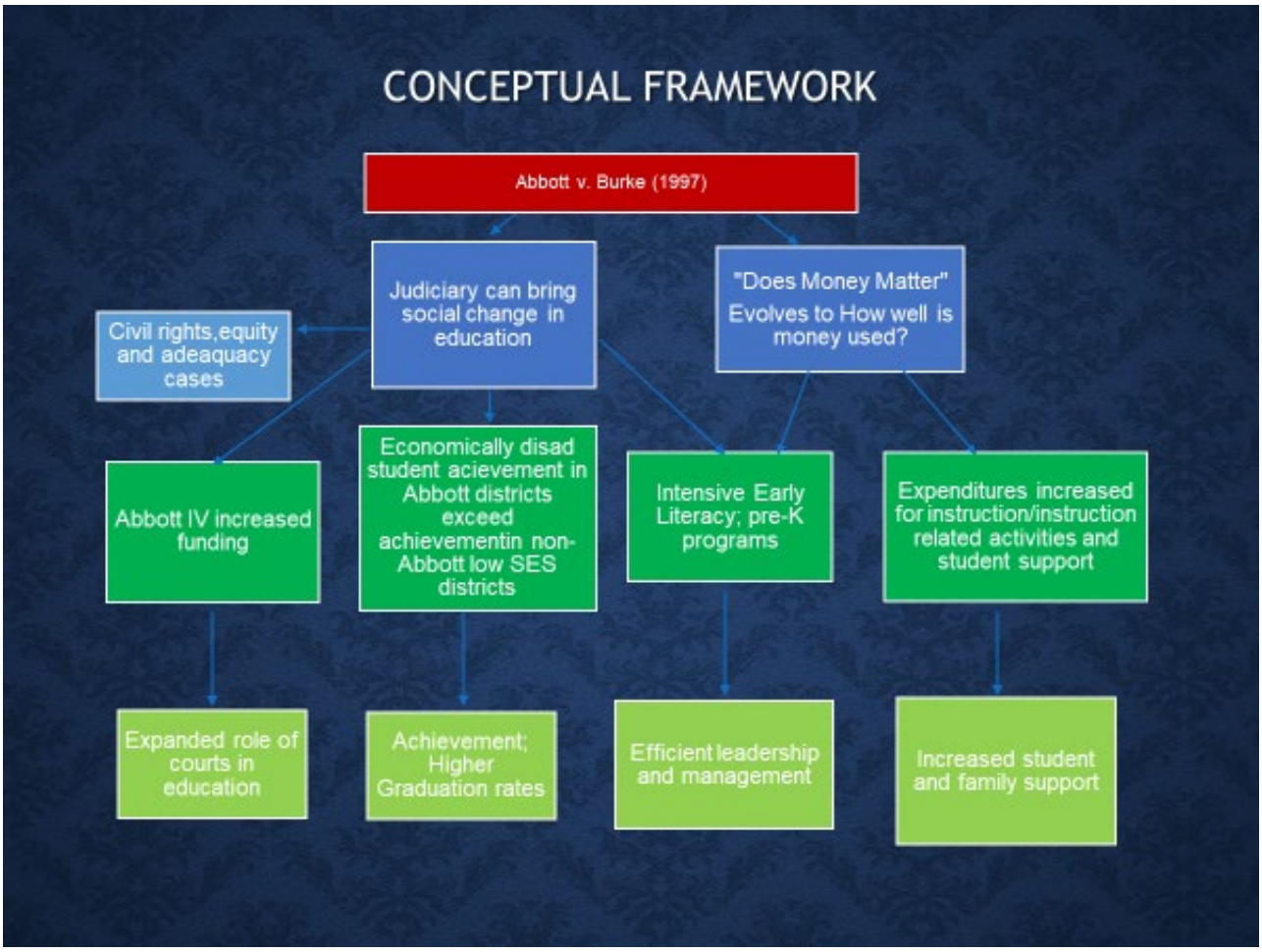
Chapter 2: CONCEPTUAL FRAMWORK and PREVIOUS LITERATURE

A framework for interpreting the literature on equity in funding, academic achievement, and school quality can be summarized by two theoretical propositions and four hypotheses. Proposition 1 is that the judiciary can bring about effective social and policy change in education.[20] Proposition 2 is that money does matter in terms of bringing about these changes, and to improve the education of economically disadvantaged students.

The first hypothesis is that the leading case of Abbott v. Burke and subsequent reform policies stemming from the litigation increased funding for economically disadvantaged children in Abbott districts. The second hypothesis is that increased resources from Abbott v. Burke directly reached students in the classroom through instruction, instructional staff support, and student support services. The third hypothesis is that the court decision of Abbott v. Burke improved the academic achievement of economically disadvantaged students in the Abbott districts as compared to students in low socioeconomic and working-class districts that were not covered by the court orders. The fourth hypothesis is that Abbott v. Burke and specific policies such as the Intensive Early Literacy program, and Abbott pre-school initiatives were positively associated with the academic achievement of economically disadvantaged students in Abbott districts.

[20] Specifically the policy change will improve educational outcomes of economically disadvantaged students. in education.

Figure 2-1. Two Propositions and Four Hypothetical Relationships Produce Positive Outcomes



Proposition I. The judiciary can bring about effective social and policy change in education

Can the Courts influence social and policy change? From Alexis De Tocqueville to Alexander Hamilton the question of whether courts can be the impetus of positive social change has provoked a controversial and far-reaching debate.

2.2 The Constrained View

There are several scholars who assert that the courts have little real impact on social reform. (Klarman, 2004; Rosenberg, 1991; Ackerman, 1989; Bickel, 1962). Gerald Rosenberg has argued that "the perception that courts have been powerful, vigorous and potent proponents of change is an overstatement of the role of the courts, and a mystification of the judiciary." (Rosenberg, 1991, p. 2). Rosenberg cites Alexander Hamilton for calling the judiciary the "least dangerous" branch of government. Hamilton stated that since the judiciary lacks power over the "sword or the purse" their ability to produce political or social change is limited. (Rosenberg, 1991, p. 3) (Canon 1998, p. 215). Commentators such as Murray, Evans, and Schwab have pointed out that Rosenberg's constrained model echoes Alexander Hamilton' s argument that the court's lack of control over the "sword or the purse" impedes their ability to effect significant social change. (Murray, Evans, and Schwab, 1998, p.790). Rosenberg terms this the constrained view, as the judiciary "can do little more than point out how actions have fallen short of constitutional or legislative requirements and hope that appropriate action is taken." (Rosenberg, 1991, p. 3). Murray and her colleagues asserted that "This model focuses on the importance of legal precedents, judicial dependence on public opinion and the other branches of government, and the judiciary' s limited institutional capacity to develop and implement policy." (Murray, Evans, and Schwab, 1998, p.790).

Rosenberg argues that "a closer examination reveals that before Congress and the executive branch acted, courts had virtually no direct effect on ending discrimination in the key fields of education, voting, transportation, accommodations and public places and housing…Only when Congress and the executive branch acted in tandem with the courts did

change occur in these fields. Brown and its progeny stand for the proposition that courts are impotent to produce significant social reform. (Rosenberg, 1991, p. 71).

Several scholars support Rosenberg's view that the courts have had little impact on social and policy change. One commentator emphasized that "The actions of the political branches of government ultimately determine whether society changes or not. The courts, acting alone, change almost nothing." (Carter, 1992, p.1221-22). Carter argues that with the exception of two decades when Brown and Roe were decided, Justices on the US Supreme Court have been indifferent to social change or have worked to prevent it.

Although Murray indicated that her findings offered some support for the view that a dynamic court can play an important role in social change, she ultimately concluded that "Courts have accomplished little. The ineffectiveness of the courts does not stem from their inability to institute important change, but instead from their unwillingness to pursue reform." (Murray, Evans, and Schwab, 1998, p.791). Some commentators also believe that the courts are infringing upon the province of educators stating "Some educators claim that the involvement by the courts in is an unwarranted intrusion on their legitimate professional authority." (Jensen, 1983).

2.3 The Dynamic Model of the Courts

In stark contrast, the dynamic view is that with the advent of civil rights cases, women's rights, environmental, political reform, American courts seemingly have become important producers of political and social change. The dynamic model assumes that courts can be, and often are, significant political actors capable of effecting important social change. (McCann,

1992, p. 717).[21] The dynamic court model postulates a powerful court that has been instrumental in effecting significant social change. (Feely, 1992, p. 746). Advocates of the dynamic model argue that the courts are effectively insulated from political and social pressure, that the accumulated moral authority of the courts is an important tool, and that the courts are in a unique position to initiate important social reforms. (Murray, Evans, and Schwab, 1998, p. 790). Proponents of the dynamic view assert that since courts are unencumbered by electoral commitments and political deal-making, and protected from recrimination, they can act to fulfil the constitutional mandate. Another commentator stated, "The 'dynamic court' view holds that American courts have indeed produced dramatic social change. Brown v. Board of Education, Baker v. Carr, Roe v. Wade-are these not sufficient testimony to this widely accepted truth?" (Stumpf, 1993, p. 256).

Although Rosenberg advances the constrained view, he aptly describes the dynamic view in stating, "Part of what makes American Democracy exceptional is that it includes the world's most powerful court system protecting minorities and defending liberty, in the face of opposition from democratically elected branches. American look to activist courts, then as fulfilling an important role in the American scheme… [This view] sees courts as powerful, vigorous, and potent proponents of change." (Rosenberg, 1991, p. 2). Rosenberg posits that courts may produce social reform if there is ample precedent supporting bold judicial action; support for change from legislative and executive officials; court implementation capacity must be overcome by some mix of citizen support, low opposition, and at least one of four favorable conditions: (a) positive incentives are offered to induce compliance; (b) costs are imposed to induce

[21] The dynamic view of the courts is distinguished from the dynamic view of statutory interpretation. The dynamic aspect of statutory interpretation is that statutory texts, like literary texts, are transformed every time they are interpreted (Epstein, Segal, and Victor 2002); (Eskidge and Frickey 1988).

compliance; (c) court decisions allow for market implementation; (d) crucial extrajudicial actors are willing to use court orders as a tool for action. (McCann, 1992, p. 717).

Recently two commentators from the Center for American Progress supported the dynamic view of the courts, stating that "No matter the issue-whether it's marriage equality, voting rights. health care, or immigration---the US federal courts play a vital role in the lives of all Americans." (Jawango and Wright, 2015).

The dynamic view is not limited to federal courts in that State court orders and State legislative reforms have generated sustained increases in education funding for economically disadvantaged students during the past three decades. "The federal courts have power to determine whether state and federal legislation in unconstitutional, and they may in some cases determine whether a state statute violates the constitution. State courts are the final arbiters as to whether state statutes conflict with the state constitution, and they may also declare such statutes to be in violation of the federal Constitution." 16 C.J.S. Constitutional Law § 86. In the context of Abbott v. Burke, the New Jersey Supreme Court is the final arbiter as to whether the School Funding Reform Act of 2008 (SFRA) satisfied the "thorough and efficient" clause of the New Jersey constitution.

Julien LaFortune, Jesse Rothstein, and Diane Schanzenbach invoke the dynamic view of State courts, in stating that "After desegregation, school finance reform is perhaps the most important education policy change in the United States in the last half century." (Lafortune, Rothstein, and Schanzenbach, 2018. p. 23). (see review of State court decisions adjudicating State school finance reforms, infra, p. 22 and Studies of State Finance Reforms Using Quasi-Experimental Statistical Methods, infra, p. 38.)

Furthermore, State courts can be effective catalysts for reform because they provide a 'shield' that allows legislators to solve the problems in the educational system without the usual political constraints, specifically those against raising taxes. (Bosworth, 2001).

Rosenberg's "constrained view" position provoked a swift response from many scholars. David Schultz and Stephen Gottlieb cited Alexis De Tocqueville for the proposition that, "There is hardly a question in the United States which does not sooner or later turn into a judicial one." (Schultz and Gottlieb, 1996, p. 90). Schultz and Gottlieb asserted that because of the close association between the languages of politics and law De Tocqueville's statement that "Americans have given their courts immense political power" applies.[22] Schultz and Gottlieb argue that De Tocqueville recognized and Rosenberg hinted that "the judiciary's real power and efficacy lies in how its decisions influence our political language and the way we think about political and social issues. The court's decisions have tremendous sway over the way we think about politics, providing the opportunity and impetus for action." Ibid.

Many commentators also assert that sometimes the courts are the only game in town. "At a time when other social institutions were perhaps deaf to the needs of minorities, women, prisoners, or others, the judiciary did its best to address the grievances with which it was presented and to provide legitimacy to both claims and claimants in public discussion." Id. at 91. Pursuing social change through the courts demands patience. A myriad of scholars have argued that social and policy change is incremental at best, and was designed to be that way. (Dahl, 1965, pg. 4-34.). As far back as 1957, Robert Dahl stated that "It follows that within the somewhat narrow limits set by the basic policy goals of the dominant alliance, the Court *can* make national policy." (Dahl, 1957, p. 293-94). Dahl further stated that "The Court is least

[22] ALEXIS DE TOCQUEVILLE, DEMOCRACY IN AMERICA 270 (1969).

effective against a current lawmaking majority-and evidently least inclined to act. It is most effective when it sets the bounds of policy for officials, agencies, state governments or even regions, a task that has come to occupy a very large part of the Court's business." (Dahl, 1957, p. 294).

Federal Courts are Dynamic in Upholding Voting Rights, Criminal Due Process Rights, First Amendment Rights, and Desegregating Public Schools

Bradley Canon's analysis of Rosenberg's writings argue that US Supreme Court justices were largely successful in accomplishing four or five of the seven court generated policy reforms, without much assistance from the other branches of government. (Canon, 1998, p. 241). The court generated policy reforms include (1) legislative reapportionment; (2) criminal justice; (3) Schoolhouse religion; (4) desegregation; (5) greater availability of sexually oriented material; (6) advertising by professionals, and (7) abortion. (Ibid). Canon stated that "These seven are the most important ones in the second half of the twentieth century for which it can reasonably argues that the supreme court played a major if not central role in their achievement." (Canon, 1998, p. 225). In Baker v. Carr (369 U.S 186, 1962) and follow up cases, the Supreme Court clearly commanded a major political reform through imposition of the "one person, one vote" rule on state legislatures and national House of Representative districts. The criminal due process decisions of Mapp v. Ohio (367 U.S. 643) in 1962, Gideon v. Wainwright (372 U.S. 335) in 1963, Miranda v. Arizona (384 U.S. 436) in 1966, and In re Gault (387 U.S. 1) in 1967 clearly lead to major procedural changes by police, prosecutors, and trial court judges. The Court found formal prayers or Bible reading in public schools to be unconstitutional, which

required implementation at the school level.[23] Canon asserts that "Desegregating schools and other public facilities required the assistance of other governmental actors, most notably Congress in the 1960's and the Departments of Justice and Education subsequently…To some considerable extent these actors' assistance resulted from political pressure inspired by Brown." (Canon, 1998, p. 233). Canon pointed out that Rosenberg argues that "the momentum from the already existing civil rights organizations, black economic and political pressures, and other events and philosophies more inspirational to blacks were primarily responsible for the movement and its political successes." (Canon, 1992, p.648). Canon asserted that "In my view, Rosenberg (1991) underrates *Brown's* effects… I recall from living in the South in the 1950s that *Brown* pushed the question of racial equality to first place in the region's political agenda. It raised the issue a few notches on the national agenda as well. (Ibid.) In Roth v U.S., the Supreme Court held that sexually oriented material was protected by the First Amendment unless the dominant theme of the work, taken as a whole, appealed to prurient interests and lacked social redeeming value. Canon argues that the "Roth decision enabled social reform to take place on a pervasive basis."[24] (Canon, 1998, p. 234). When Roe v. Wade removed the legal prohibitions against early term abortions and allowed a woman to choose whether to terminate the pregnancy, Canon states the decision inspires "acceptance of abortion as personal-choice possibility by women who previously would not have considered it." (Canon, 1998, p. 238). Canon stated that "The Supreme Court was and remains an important player in the achievement of abortion reform…the Court made it a nationwide option and almost alone, has protected it against frequent and intense challenges." (Canon, 1998, p. 241). Finally, the Virginia Board of

[23] Engel v. Vitale (370 U.S. 421, 1960); Abington Twp. V. Schempp (373 U.S. 203, 1960).
[24] Canon argues the court "did this without any implementation or imposition of costs on other actors by non-judicial government agencies, and the reform was achieved within a few years of the decision." (Canon 1998, p. 234).

Pharmacy v. Virginia Consumers Council ended the prohibition on advertising by professionals resulted in numerous pitches for lawyers, accountants, dentists, and managed health care on television, radio and in print media.

Canon asserted that his portrait of the Court is one of significant policy-making independence and capacity. (Canon, 1998, p. 241). Canon concludes that "The Supreme Court, at least over the last half century, has instituted or had a crucial role in securing a number of major policy reform in the United States. It is not a bit player or supporting actor, but a major player with both an independent and interdependent role on the public policy stage." (Canon, 1998, p. 244).

Commentators have been most vocal in asserting the U.S. Supreme Court paved the way for school desegregation. Mark Tushnet argues that Brown established a fundamental principle of constitutional law, stating that "Government decisions relying on race (or relying on race to subordinate) rapidly became unconstitutional, and arguments that such decisions were acceptable rapidly became discredited." (Tushnet, 1994, p. 176). Tushnet further stated that "We can wonder whether the participants would have been so persistent [in the Montgomery bus boycott] had they not known that one of the nation's major governing institutions had endorsed the principle for which they were contending." (Tushnet, 1994, p. 179). Schultz also argues that Rosenberg undervalues direct and positive effects of Brown on the Montgomery bus boycott, stating that "Brown put something on the agenda and made it acceptable and legitimate to criticize segregation. (Shultz, 1998).

Malcom Feely asserted that Rosenberg misinterpreted the goals of the courts. He argues that a reading of Brown and its progeny even into the late 1960s and 1970s doesn't reveal that "integration" was a central goal. Feely states that, "If we have to find one word to capture the

aspirations of these decisions, it would not be integration, but desegregation, the elimination of apartheid, official, state-sanctioned systems of racial separation." (Feely, 1992, p. 753).[25] Thus, Feely is implicitly arguing that the failure of the courts to institute social change arises from their unwillingness to pursue reform, rather than their inability to be a catalyst for such change. The U.S. Supreme Court has turned in a more conservative direction beginning in the 1970s; the implication of Feely's point seems to be that the Court has the potential for effectuating broad-based social reform if it chooses to do so.

Rosenberg directly responded directly to Feely's point that the goal of the courts was not integration, but desegregation, stating that "But even assuming this to be the case, the Court failed miserably. A state-sanctioned system of apartheid continued throughout much of the South until the Congress acted in 1964. (Rosenberg, 1992, p. 765).

Michael McCann was critical of Rosenberg's use of sources, stating that "Rosenberg uses only selective quotations by activists and servers that support his points about the lack of indirect effects from litigation while ignoring abundant others." (McCann, 1992, p.722). Rosenberg acknowledged and directly responded to this criticism in stating "The major question, however, is not whether any activist ever mentioned Brown or the Court, but rather the importance the decision for the movement as a whole." (Rosenberg, 1992, p. 767-68).

Rosenberg concedes that in analyzing whether courts could successfully be used to further social reform, "Empirical studies are needed that examine claims of rights consciousness, of the instigating and mobilizing potential of the law." (Rosenberg, 1992, p. 777).

Rosenberg's view that the courts have had little impact on social and policy change is arguably restricted to federal courts. Douglas Reed stated that, "Rosenberg's work focuses

[25] Feely further stated that "It is a misreading of Brown and even the later more rulings to assert that racial integration was a-or the-goal of the Court in Brown. (Feely 1992, p. 754).

exclusively on the federal court system, paying particularly close attention to the rulings of the U.S. Supreme Court (Reed, 1998, p. 180). Furthermore, Murray, Evans, and Schwab stated that "The U.S. Supreme Court's decision in Rodriguez has forced reform advocates to take their argument to state courts, and thus fight 50 separate battles. (Murray, Evans, and Schwab, 1998, p. 808). Rosenberg's assertion that "courts had virtually no direct effect on ending discrimination in the key fields of education, voting, transportation, accommodations and public places and housing" appears to be limited to litigation in federal courts. State courts are distinguished from federal courts in that state supreme court justices are often elected directly or after a fixed term in office. Douglas Reed states that, "State constitutions are much more susceptible to political change than the U.S. Constitution, with a greater likelihood of a reversal through amendment of an unpopular decision (Reed, 1998, p. 181; Reed, 1997; see also Lutz, 1996).

In a direct challenge to Rosenberg's "constrained view" of federal courts, Reed asserts that "State supreme courts can produce meaningful and durable changes in the distribution of educational revenues-even in the face of intense political opposition and recalcitrant state legislatures." Reed further points out that the results that state supreme courts have achieved in promoting greater equity often come in the face of intense voter opposition. Ibid.

The Dynamic Model Applies to State Supreme Courts that have Upheld School Finance Reforms

Several state supreme courts have spurred social and education policy change by dramatically altering the school finance landscape. When the U.S. Supreme Court held that education is not a "fundamental interest" under the U.S. Constitution in San Antonio Independent School District v. Rodriguez, this decision effectively moved challenges to state education systems to state courts. 411 U.S. 1 (1973).

In 1973, the New Jersey Supreme Court held in Robinson v. Cahill that the school funding statute violated the "thorough and efficient education" requirement in the State constitution and rejected the Legislature's suggested remedies. Robinson v. Cahill, 62 N.J. 473 (1973). In Serrano v. Priest (1976), the California Supreme Court held that the state's system of school finance violated both the Fourteenth (14th) amendment and the equal protection clause of the California constitution. Serrano v. Priest, 557 P.2d 929 (Cal. 1976). In response to Serrano, the State legislature increased foundation aid and introduced revenue limits. The limit was a cap on the sum of a district's property tax revenue and state aid. Subsequent to 1973, the revenue limits of low- spending districts were allowed to increase faster than the limits of high-spending districts.[26] (Murray, Evans, and Schwab, 1998, p. 794).

As previously mentioned, in the McDuffy and Rose cases, state courts have also issued rulings requiring major changes to state education systems. In *Rose* the Kentucky Supreme Court held that not only was the disparity in resources between economically disadvantaged and wealthy districts unconstitutional, but the entire state education system-including financing,

[26] After passage of Proposition 13 in 1978 set the maximum property tax rate at 1 percent, a district's property tax revenue is determined by the 1-percent rate and the state provides the additional revenue necessary to bring the district to its revenue limit.

governance, and curriculum-was unconstitutional as well. Rose vs. Council for Better Education, 790 S.W.2d 186 (Ky. 1989). The State responded by raising the state's foundation grant, adjusting equalization grants and property assessments so that poorer districts received a larger share of state aid, and changing the aid formula so that state funding was now calculated on a per-pupil basis. (Murray, Evans, and Schwab, 1998, p. 794).[27] In reaction to *McDuffy*, the Massachusetts legislature enacted the Massachusetts Education Reform Act (MERA) a two-phase reform that prioritized finance overhaul, standards, testing and accountability.

In DeRolph v. State, the Ohio Supreme Court held that Ohio's school finance system, which relied heavily on local property tax and contributed to disparities between wealthier and poorer school districts was unconstitutional. DeRolph v. State, 78 Ohio St.3d 193, 677 N.E.2d 733 (1997). The court stated that, "Ohio's elementary and secondary public school financing system violates Section 2, Article VI of the Ohio Constitution, which mandates a thorough and efficient system of common schools throughout the state." Ibid. In DeRolph IV, the court directed the General Assembly to enact a school-funding scheme that is thorough and efficient—meaning "a complete systematic overhaul" of the school-funding system. DeRolph v. State, 97 Ohio St.3d 434 (2002); citing DeRolph v. State, 78 Ohio St.3d at 212, 677 N.E.2d 733. The court did not retain jurisdiction.

Prior to the mid-nineteen seventies, Connecticut distributed per-pupil state aid to schools via a flat grant program, without consideration for disparities in wealth among the districts. In Horton v. Meskill, the Connecticut Supreme Court held that the Connecticut Constitution requires the state to "provide a substantially equal educational opportunity" and declared the existing system unconstitutional because it was based primarily on local property taxes with no

[27] In response to Rose, the State also introduced site-based management councils that make decisions previously made by principals, and established performance-based assessment and a reward system that is tied to assessment.

significant equalizing state support and, therefore, generated large per-pupil spending disparities. Horton v. Meskill, 376 A.2d 359 (1977). The State legislature responded by replacing the flat grant program with a minimum expenditure requirement and a guaranteed tax-base formula. (Murray, Evans, and Schwab, 1998, p. 794).

In Sheff v. O'Neill, the Connecticut Supreme Court held that racial segregation, whether or not it resulted from intentional state action deprived the plaintiff schoolchildren of their right to a substantially equal educational opportunity and required the state to take remedial measures. Sheff v. O'Neill, 678 A.2d 1267 (1996). The court relied on the state constitution education clause together with a clause added in 1965, which specifically prohibited segregation. In 2020, the Sheff case was settled, adding up to 1,052 new magnet school seats in suburban schools, and reserves 600 of those seats for Hartford students.[28]

Since 1973, there have been school funding litigations in 47 of the 50 states and plaintiffs have prevailed in 57 percent of them. (Rebell, 2009, 2019).

Some of the major decisions include:

Gannon v. State of Kansas, in which the Kansas Supreme Court strengthened the adequacy definition it had applied in previous decisions by fully adopting the Rose standard. 390 P.3d 461 (Kansas 2017). In 2019, the Kansas Supreme Court found the state complied with adequacy requirements set forth in the state constitution. Gannon v. State, 443 P. 3d 294, (Kansas, 2019) (Gannon VII). The court held that the version of the KSEEA in place with the adoption of SB 16 substantially complies with [the Court's] orders expressed in Gannon VI

[28] In the Sheff settlement, $1.1 million will be provided to magnet schools to develop school themes aimed at attracting diverse student populations, $800,000 will be allotted to provide academic and social support for Hartford students enrolled in the district's Open Choice program, and $300,000 will be provided to incentivize suburban schools to accept greater numbers of Hartford students. *Sheff v. O'Neill*, judicial district of Hartford, Docket No. LND CV-17-5045066-S (January 10, 2020). Retrieved from http://ctschoolfinance.org/resources/uploads/files/2020-Sheff-Stipulation.pdf.

because SB 16 annually increases the BASE aid amounts by approximately $90 million per year on a four-year schedule beginning in SY 2019-2020 through SY 2022-2023. In McCleary v. State, the Washington Supreme Court held that the state must "amply provide for the education of all Washington children as the State's first and highest priority before any other State programs or operations." 269 P.3d 227 (Wash. 2012). The court accepted the sweeping reform plan adopted by the legislature; program reforms and cost analysis and recommended by a legislative task force, and the legislature's commitment to phase those reforms over six years. In 2014, the court held the state in contempt for failing to comply with an adequacy order issued in 2012. In June of 2017 the Washington State budget included a $7.3 billion increase over four years for education. In June of 2018, the Washington Supreme court held that the state had met all of its obligations under the 2012 court decision as the legislature enacted measures to implement the salary allocation model by the 2018-19 year.

Abbeville City School District v. State of South Carolina in which the South Carolina Supreme Court held that the state's education funding formula denied students the constitutionally required opportunity to receive a minimally adequate education. 515 S.E.2d 535 (S.C. 2014).

William Penn School District v. Pennsylvania Department of Education where the Pennsylvania Supreme Court held that there are manageable standards for determining whether the State's funding system is providing students a "thorough and efficient education"—which is identical to a clause in the New Jersey Constitution. 170 A.3d 414 (Pa. 2017). The court overruled two prior Pennsylvania Supreme Court decisions in finding plaintiffs should have the opportunity at trial to prove that current funding levels are inadequate. Prior to this case, the

court had held on two occasions that the adequacy of education funding under the "thorough and efficient" clause was non-justiciable.

Cruz-Guzman v. State, where the Minnesota Supreme Court denied a motion to dismiss, holding that the adequacy language in the state's education clause had a "qualitative" dimension that courts can use to assess whether students are receiving an adequate education. Cruz-Guzman v. State, 916 N.W.2d 1 (Minn. 2018).

Yazzie and Martinez v. State of New Mexico, in which the First Judicial District Court held that the State's education finance system violated the Education, Equal Protection, and Due Process clauses of the New Mexico constitution. No. D-101-CV-2014-02224 (2018). The court issued a declaratory judgment requiring the State to take "immediate steps to ensure that New Mexico schools have the resources necessary to give at-risk students the opportunity to obtain a uniform and sufficient education that prepares them for college and career." Specifically, the court found that pre-K, afternoon, and summer programs were proper supports for at-risk students. Moreover, the court found that weighting at-risk students an extra ten (10) percent in the State funding formula was not sufficient. In January of 2019, Gov. Michelle Lujan Grisham promised a "moonshot" to overhaul the state's education system.[29] In February of 2019, in the final judgment and order, the court enjoined the State to create a constitutionally adequate public education system—including a proper funding system, teachers, and an accountability system—to ensure all at-risk students have the resources necessary for a sufficient education so they are college and career ready.[30] In March of 2020, the State filed a motion to dismiss the case,

[29] New Mexico provided additional funding for the state's K-12 education system during the 2019 and 2020 legislative sessions.

[30] The court stated that "Final judgment in this case is entered in favor of the Martinez and Yazzie Plaintiffs and against the Defendants in accordance with the Court's July 20, 2018 Decision and Order and the Court's December 20, 2018 Findings of Fact and Conclusions of Law."

arguing that the landmark Yazzie/Martinez orders have been sufficiently met. In June of 2020, the trial court judge denied the motion, holding that although the state had substantially increased funding for at-risk students, it still had not fully complied with the court's order. The court further ruled that the public school system should remain under the court's oversight until long-term reforms are implemented.[31]

On the other hand, in 2013 the Colorado Supreme Court held that evidence produced at trial was insufficient to establish that there was not a rational relationship between the state's education finance system and the constitutional mandate for a uniform system of free schools throughout the state. Lobato v. State of Colorado, 304 P.3d 1132, 2013 CO 30 (2013).

In 2019, the Florida Supreme Court affirmed the trial courts' determination that the terms "efficient and high quality" in the state constitution are no more susceptible to judicial interpretation than "adequate" was under the prior version of the education provision, and that to define these terms would require an initial policy determination of a kind that was not appropriate for judicial determination. Citizens for Strong Schools, Inc. v. Florida State Board of Education, 262 So. 3d 127, (Fla. 2019). In 2020, the 5th District Appellate Court in Illinois upheld the dismissal of an adequacy case, stating that, "While we agree that some of the reasoning in *Edgar* focused on the lack of measurability of 'quality,' the ultimate holding in *Edgar* was broadly stated, concluding that the determination of whether the [s]tate was fulfilling its duty of providing for a quality education was outside the judicial function." Cahokia Unit School District No. 187, et al., v. J.B. Pritzker, 2020 IL App (5th) 180542, (Ill: Appellate Court, 5th Dist. 2020).

[31] https://www.maldef.org/wp-content/uploads/2020/07/Order-Denying-State-Motion-for-Dismissal.pdf

The Dynamic Model Applies to State Courts that are Well Positioned to Impose Remedies in Equity and Adequacy Cases

State courts are well situated to impose remedies in equity and adequacy cases. State courts can set of goals, define educational requirements, adopt of performance standards, and monitor educational outcomes; they are capable of requiring states to cost-out the price of an adequate education and assuring funding necessary to provide an adequate education; and of equalizing funding to bring up the bottom than holding down the top.

Michael Rebell points out that, "The court's ability to impose significant sanctions has repeatedly overcome resistance from other branches. Courts have the power to find public officials in civil contempt for failing to comply with judicial orders and to fine or even jail these officials until compliance is forthcoming. As illustrated by the Kansas example, they can also mandate the closing down of the entire state's public school system until the unconstitutionality of the states' education finance system has been cured." (Rebell, 2009, p. 92).[32] Rebell further points out that courts in three other states, New Jersey, Arizona, and Texas considered funding shutdowns, which resulted in compliance by the legislative and executive branch.

Rebell states that, "The combination of widespread respect for the state courts' responsibility to enforce affirmative [state] constitutional rights to a basic quality education and effective compliance sanctions the courts can wield…provides the courts with both the carrots and the sticks they need to carry out the…oversight they require to implement the successful schools model." (Rebell 2009, p. 92).

However, the ability of state supreme courts to impose remedies in reviewing education policies and programs enacted by the legislative branch and implemented by the executive

[32] Courts in Kansas, New Jersey, Arizona, and Texas threatened to shutdown the schools statewide, and each time that threat has resulted in prompt compliance by the other branches.

branch is limited by the separation of powers doctrine. At the federal level, "The separation of governmental powers into the legislative, executive, and judicial is fundamental to our constitutional form of government, and under the constitution, no one department may interfere with or encroach upon either of the other departments." 16 C.J.S. Constitutional Law § 111 (a). It is important to note that the "The separation of powers doctrine which is embodied in the federal constitution is not mandatory in state governments…It is for the state to determine whether and what extent its powers shall be kept separate between the branches of government." Id. at (b). "The separation of powers doctrine is designed to prevent a single branch from assuming inordinate power, but does not bar cooperative actions among the branches of government, it guarantees a system of checks and balances." 16 C.J.S. Constitutional Law § 112; Brown v. Heyman, 297 A.2nd 572, 62 N.J. 1; Mount Laurel Township v. Department of Public Advocate, 416 A.2nd 886, 83 N.J. 522.

In New Jersey, there is a delicate balance between the functional roles of the courts and the executive branch, particularly pertaining to the imposition of remedies in cases reviewing education programs. The New Jersey Supreme Court is one of the few state courts to have been involved in programmatic oversight, such as in the Abbott II decision when they ordered that additional funds be provided for supplemental education programs to meet special needs of economically disadvantaged students. Abbott v. Burke, 575 A.2nd 359 (N.J. 1990). In Abbott IV, the court ordered the Commissioner of Education to submit programmatic proposals for review by a special master and the trial court. However, the court was cognizant of separate and distinct roles of the executive branch and the court. The court stated that, "The determination of appropriate remedial relief in the critical area of special needs of at-risk children and the programs necessary to meet those needs is both fact-sensitive and complex; it is a problem

squarely within the special expertise of educators. A court alone cannot, and should not, assume the responsibility for independently making critical education findings and determination that will be the basis for such relief. We can, however, provide necessary procedures and identify the parties who best may devise the educational, programmatic, and fiscal measures to incorporated in such remedial relief. Abbott v. Burke, 693 A.2d 417, 444 (N.J. 1997).

The balance between the functional roles of the courts and the executive branch was explored in Castaneda v. Pickard wherein the court developed a three-stage process for reviewing the district's development of an educational program that would comply with the statutory requirements:

1. "Ascertain that school system is pursuing a program informed by an educational theory recognized by some experts in the field, or at least deemed a legitimate experimental strategy…"

2. Determine "whether the programs and practices actually used by a school system are reasonably calculated to implement effectively the educational theory adopted by the school."

3. Ensure that after being employed for a period of time sufficient to give the plan a legitimate trial, [the plan] produces results indicating that the language barriers confronting students are actually being overcome…" Castaneda v. Pickard 648 F.2d 989, 1009-10 (5th Cir. 1981).

Rebell asserts that "Consistent with the Castaneda framework, in the sound basic education context, the policy decisions about educational programming and spending oversight should be the domain of the legislative and executive branches." (Rebell, 2009, p. 71).

Equalizing Education Spending Across Districts

Supports the Dynamic Model of State Courts

Douglas Reed analyzed eight states that had been subject to school finance litigation, including five states wherein state courts found that the school funding system violated the respective state constitutions, and three states wherein the education funding systems were upheld. He used two basic measures: the range and the Gini coefficient. The range measures the spending levels at the low and high ends of the resource distribution.[33] (Reed, 1998, p. 182). In Connecticut, Kentucky, New Jersey, and Tennessee, Reed found significant increases in revenues among the lowest-spending districts during the relevant years and median districts had significantly more resources at their disposal after the court decisions. Reed also found that that all states indicated increasing equity (whether modest or great) after the state supreme court invalidated the existing school finance system, including Connecticut, New Jersey, Texas, Kentucky and Tennessee. (Reed 1998, p. 191).

Douglas Reed argues that any account of judicial capacity within the realm of school financing must engage at least these three factors:

- interest group opposition
- voter opposition
- judicial scope and ambition. (Reed 1998, p. 205).

Murray, Evans, and Schwab examined the question of "Has court-mandated school-finance reform altered the within-state distribution of education expenditures?" (Murray, Evan,

[33] Reed indicated that as a measure of equity, the range is severely limited. Reed stated that, "A key problem with the range is that does not capture-over time-any changes that may take place within those two extremes. As a result, I rely on the Gini coefficient to provide a view of equity." The Gini coefficient provides a measure of equality into account transfers from all districts in the revenue distribution, not just those at the top and the bottom ends of the scale. The Gini coefficient ranges between 1 and 0, with 0 indicating perfect equality. Thus, the lower the Gini coefficient, the more equal the revenue distribution. (Reed 1998, p. 191).

and Schwab, 1998, p. 799). The researchers used four measures of the within-state distribution of education expenditures-the Theil index, the Gini coefficient, the natural logarithm of the ratio of spending at the 95th percentile to spending at the 5th percentile, and the coefficient of variation (standard deviation divided by the mean). Id. at 796. Murray and her colleagues stated that "Our results imply that reform in the wake of a court decision reduces spending inequality within a state by 19 to 34 percent." Id. at p. 806). They found that "Spending would rise by 11 percent in the poorest school districts, rise by 8 percent in the median district, and remain roughly constant in the wealthiest districts." Id. at p. 807).

Murray and her colleagues conclude that "Our results offer some support for Rosenberg's (1991) model of a dynamic court that can play an important role in social change." Id. at 808.

2.4 Proposition II. Money does matter in improving the education of economically disadvantaged students

"Should we or should we not spend more money on schools?' (Hanushek, 1994, p. 8). This question has profound ramifications as education has been termed the "the great equalizer." (Lee and Burkham, 2002).

One researcher noted that the issue of "does money matter" has been "difficult to study" and "no consensus on the answer has yet emerged." (Dinan, 2009, p.105). During the last ten-fifteen years of the 20th Century, the battle lines over the "does money matter" issue appeared to peak, with vitriolic statements emanating from either side. In fact, Lafortune and his colleagues stated that "The literature regarding whether "money matters" in education (Hanushek, 1986, 2003, 2006; Card and Krueger, 1992a; Burtless, 1996) is contentious and does not offer clear guidance." (Lafortune, Rothstein, and Schanzenbach, 2018, p. 3). The lack of clear evidence,

comprehensive data, and substantive research on the "does money matter" issue during this time appeared to accentuate the controversy.

The public outcry over the issue has substantially diminished in recent years, as compared to a decade ago. In 2004, John Yinger stated that "Although some of the evidence indicates that state aid reform can boost student performance, none of the findings are definitive, and some of them are quite ambiguous." (Yinger, 2004, p.39) Since that time, major advances in research probing the relationship between educational inputs and outcomes have provided more clarity.

2.5 History of "Does Money Matter" issue

The discussion of "does money matter" originally emanated from the Coleman report.[34] James S. Coleman stated that the largest determinants of student achievement are not school resources but the "educational backgrounds and aspirations of other students in the school." (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, and York, 1966, p. 22). After the Coleman report the conventional wisdom became the belief that additional resources play little or no role in producing better-educated students.

[34] The Coleman report is by Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander M. Mood, Frederick D. Weinfeld, and Robert L. York. 1966. *Equality of Educational Opportunity.* Washington: U.S. Department of Health, Education, and Welfare, Office of Education. The EEO report was commissioned by Congress in the Civil Rights Act of 1964. The authorizing language from section 402 of the Civil Rights Act provides that "The Commissioner [of Education] shall conduct a survey and make a report to the President and the Congress, within two years of the enactment, concerning the lack of availability of equal educational opportunity for individuals by reason of race, color, religion, or national origin in public institutions at all levels in the United States, its territories and possessions, and the District of Columbia." Karl Alexander and Stephen Morgan stated that "The project was the most ambitious deployment to that time of the tools of social science in the service of education policy." (Alexander and Morgan, 2016, p. 2). The Coleman report not only reshaped the ways in which social scientists design and conduct research but it transformed how educators think about the purpose of education and significantly informed the policy arena. (Wong and Nicotera, 2004, p. 126).

In two relatively recent studies, Konstantopolous and Borman as well as Borman and Dowling used more robust statistical methods to re-analyze data that was the subject of the Coleman report. Konstantopolous and Borman found that schools do, in fact, make a difference in student achievement. (Konstantopolous and Borman, 2011, p. 123). [35]

Since the advent of the Coleman report researchers have vigorously advanced their arguments on both sides of the issue. On one hand, Eric Hanushek asserted that "Research has not shown a clear causal relationship between the amount schools spend and student achievement." (Hanushek, 2006, p. 6). He argued that the "key resources-ones that are the subject of much policy attention-are not consistently or systematically related to improved student performance." (Hanushek, 1996). Hanushek also asserts that "Simply providing more funding or a different distribution of funding is unlikely to improve student achievement (even though it may affect the tax burdens of school financing across the citizens of a state)." (Hanushek, 1997, p. 153).

W. Norton Grubb stated that "The link between spending per pupil and outcomes has always been very weak." (Grubb 2009, Education Week, March 18, 2009, Vol. 28, Issue 25, p. 24, 32). Linda Darling-Hammond acknowledges that "proponents of the status quo argue that low-cost attitudinal and administrative changes contribute more to educational equity within districts than financial resources, and that no definitive correlation has been shown between money spent and educational quality." (Darling-Hammond, 2010, p. 100).

[35] Borman and Dowling found evidence that schools do indeed matter, in that when one examines the outcomes across the national sample of schools, 40% of the variability in verbal achievement is found between schools. (Borman and Dowling 2010, p. 1238). Borman and Dowling also found compelling evidence that going to a high-poverty school or a highly segregated African American school has a profound effect on a student's achievement outcomes, above and beyond the effect of his or her individual poverty or minority status. (Borman and Dowling 2010, p. 1239). They concluded that "In dramatic contrast to previous analyses of the Coleman data, these findings reveal that school context effects dwarf the effects of family background." Ibid.

Early research focused on education production function studies that applied basic regression models to cross sectional data (e.g. data coming from one point in time) to estimate the relationship between education inputs (e.g. expenditures per pupil) and outcomes (e.g. assessments, graduation rates, lifetime income) while holding other variables constant. The early production function research could at best only identify correlations between inputs and outcomes and did not examine cause and effect relationships. (Delpier, Nagel, Stec, Gilzene, and Arsen, 2019 pp.2, 3).

In a survey of education production function literature, Hanushek concluded that "No strong or systematic relationship between school expenditures and student performance" existed. (Hanushek 1986, p 1162). Hanushek conducted a meta-analysis on 38 studies conducted between 1967 and 1987 and found that there was no statistically significant relationships between class size or teacher educational attainment and student outcomes. (Hanushek, E.A., 1989). Many districts seek to improve the student/teacher ratio and to reduce class size by utilizing increased education resources from equity and adequacy cases. (Baker, 2012, p. iv). The relationship between class size and student outcomes is important in that recent studies provide clear support for the findings from the Tennessee and Wisconsin class-size experiments: children learn more in small compared to large classes. (Ready and Lee, 2006, p. 129.)

In response to the Hanushek study, Hedges, Laine and Greenwald reanalyzed the same data and found substantially positive effects for overall spending per pupil and teacher experience. Hanushek used a 'vote counting' approach that did not consider the quality of the studies in deciding whether a study was included or excluded from the sample—his method assessed high- and low- quality studies equally. Greenwald, Hedges, and Laine as well as Wenglinsky, used a more robust selection criteria in that studies were selected if they appeared in

peer-reviewed journals, used U.S. data, included measures of academic achievement, used district level or lower data, and included covariates for socioeconomic characteristics. (Delpier, Nagel, Stec, Gilzene, and Arsen, 2019, p.3 fn 6). Using this more robust selection criteria, Greenwald, et al and Wenglinsky found that eleven of the twelve studies that were statistically significant showed a positive relationship between educational inputs and outcomes.

Hedges, et al. stated that "the data are more consistent with a pattern that includes at least some positive relation between dollars spend on education and output, than with a pattern of no effects or negative effects." (Hedges, et al, 1994, p. 12).[36] Hedges found that the pattern of effect sizes was most persuasive for global resource variables such as expenditures per pupil and teacher experience and the median effects were positive for most resource variables, with the exception of teacher education.

Hedges indicated that they were not arguing that "throwing money at schools is the most efficient method of increasing educational achievement." However, they concluded that when they relied on data most often to deny that resources are related to achievement, they found that "money does matter after all." (Hedges, et al, 1994, p. 13)

In Hanushek's response to Hedges' critique of his work, he focused on how the money is expended, rather than on the effects of increased spending. Hanushek stated that "The evidence is consistent with some districts finding effective ways to use resources and others following very ineffective policies. (Hanushek, 1994, p. 8). Hanushek responded that increased spending

[36] Wenglinsky faulted both the Hanushek and Hedges study as not being nationally representative, not providing SES measures on students, not distinguishing types of spending, and not controling for variations in cost between regions. He found that funding allocation to create/ preserve a lower teacher-student ratio had a statistically significant positive effect on student performance. He also found that spending at the district of central administration level was most successful in increasing teacher-student ratios and impacted achievement.

by 10% suggested by Hedges would result in uniform salary increases for teachers and would not increase the correlation between salaries and student performance.

The controversy and discussion of "does money matter" catapulted again to the forefront in the face of the economic meltdown of 2009. W. Norton Grubb called the issue the "money myth-the belief that the question of sufficient revenue lies back of almost every other problem and the faith that more money might resolve a variety of educational problems-is often wrong, or at best incomplete." (Grubb, 2009, p. 267). He pointed out that "this period [of economic turbulence] provides an opportunity to rethink the relationship of money to effective school resources, and to develop new approaches." (Grubb, 2009, Education Week, March 18, 2009 Vol. 28, Issue 25, p. 24, 32).

2.6 Evolution of "Does Money Matter" Debate to the Concept of "What Works-How is the Money Being Used?"

Rather than debate whether money matters, a growing number of researchers subscribe to the view that it is more important to examine "what works-how is the money being used?" (emphasis added). Michael Rebell played a pivotal role in transforming the "does money matter" question into an inquiry as to "how is the money being used". This view has evolved over the past twenty-five years and strikes a public policy compromise between the proponents of the "money does matter" and researchers who have asserted that "money does not matter."

Rebell, one of leading education finance attorneys in the country, succinctly stated that, "In the end, all of the elaborate analysis and technical discussion in the academic literature and in the legal decisions come down to a basic consensus that, of course, money matters—if it is spent well." (emphasis added) (Rebell, 2009, p. 34). Rebell states the critical question is "whether the

extra resources are being spent well and are being used in ways that actually provide students the sound basic education guaranteed by their state constitution." (Rebell, 2009, p. 35).

Furthermore, Jackson, Johnson and Persico stated that "Importantly, we find that how the money is spent may be important. As such, to be most effective it is likely that spending increases should be coupled with systems that help ensure spending is allocated toward the most productive inputs." (Jackson, Johnson and Persico, 2016, p. 214).

Indeed, Grubb asserts that the most critical question is whether increasing expenditures per student-the conventional measure of high and low spending-increases various effective school resources. (Grubb, 2009, p.77). Grubb argues that "very often money is necessary in conjunction with other resources to create compound resources-new curricula (for computers or class size reduction) plus professional development…the creation of more ambitious "pathways" such as initiatives that provide academic counselors for students. Bruce Baker concurred with this view, stating "Schooling resources which cost money, including class size reduction or higher teacher salaries, are positively associated with student outcomes." (Baker, 2012 p. iv). Baker concluded "On average, aggregate measures of per pupil spending are positively associated with improved or higher student outcomes." (Baker, 2012, p. iv).

Grubb also indicated that "Some effective resources cannot be bought…..complex and abstract resources must be constructed by teachers and leaders working collectively at the school level without much money but with certain other resources (leadership, collaboration, and vision)." (Grubb, 2009, p. 88).

Eric Hanushek eventually appeared to also subscribe to this view, when he acknowledged that "money spent wisely, logically, and with accountability would be very useful indeed." (Hanushek, 1996 pp. 37-38.)

Various commissions have echoed Michael Rebell's view that the crucial question is how the money is used. In a 2013 report to the Secretary of the US Department of Education, the Equity and Excellence Commission states that, "The time has come for bold action by the states-and the federal government-to redesign and reform the funding of our nation's public schools. Achieving equity and excellence requires sufficient resources that are distributed based on student need, not zip code, and that are efficiently used." (Equity and Excellence Commission, 2013, p. 17).

The evolution of the concept that "how the money is being used" is based on recent advances in research methodology. The availability of better data in recent years has steered the inquiry toward how the money is being used. Researchers are now utilizing longitudinal data sets, or panel data, which can be used to analyze the relationships among variables over time. The unit of observation has become more focused, with recent studies using districts or even students as the unit of observation. (Delpier, Nagel, Stec, Gilzene, and Arsen, 2019 p 3).

In recent years, the research methods to examine the relationship between educational inputs and outcomes have dramatically improved. The evolution of the concept that "how the money is being used" should be the guiding light of education policy is based in part on recent research that focuses on causation between various inputs and outcomes for economically disadvantaged students, rather than simple correlations.

State courts have also considered the question of how the money is being used. Michael Rebell reviewed judicial views on the relationship between education expenditures and outcomes in forty (40) cases filed in State courts between 1973 and 2016. "In [thirty-four] 34 [cases], the courts determined that there was a substantial correlation between expenditures and student outcomes." (Rebell, 2019, p. 12).

As previously mentioned, in reaction to McDuffy, the Massachusetts legislature enacted MERA, which is a two-phase reform that prioritized finance overhaul, standards, testing and accountability. Under MERA, the students' academic performance has steadily improved. As previously mentioned in the Statement of Purpose, in Hancock v. Commissioner of Education, the Massachusetts Supreme Court held that the State took reasonable, appropriate action by establishing objective, data driven assessments of student performance and specific performance goals; and raising the levels of student performance in the poor districts and statewide. 443 Mass. 428 (2005). The state also dramatically increased funding; closed the gap between high property-value-districts and low-property values districts by ½; and created and implemented standardized State-wide criteria of funding and oversight. Ibid.

Even the harshest critics of adequacy lawsuits stated that "Massachusetts is the brightest spot among the states that have implemented substantial adequacy remedies." (Hanushek and Linseth, 2009, p. 166). For example, Massachusetts 4th and 8th graders ranked first or tied for first on all four examinations of the NAEP and have held this unique position since 2005. (Reville, 2007). [37] Notwithstanding the positive results, even in Massachusetts the achievement gap persists between African American and Hispanic students with White and Asian students. In 2007, 39 percent of white students and 43 percent of Asian students scored 'proficient' or better on MCAS in fourth grade language arts, while only 8 percent of African American and 7 percent of Hispanic students scored 'proficient.' (Reville, 2007). Paul Reville, former Massachusetts Secretary of Education stated that "We have such a long way to go." Campaign for Educational Equity Conference, November 13, 2017, Teachers College, Columbia University.

[37] There are, however, inherent problems in relying on NAEP data, including the fact that school and district locations where the tests are administered are not disclosed by the National Center for Education Statistics (NCES).

2.7 Studies of State Finance Reforms Using Quasi-Experimental Statistical Methods

Quasi-experimental research designs to analyze statewide finance reforms are being used with increasing frequency, which are more rigorous than the education production function studies. The quasi-experimental statistical methods include fixed effects (FE), difference-in-differences (DD), regression discontinuity (RD), and instrumental variables (IV). "These improved methods allow researchers to estimate the causal impact of educational inputs on outcomes." (Delpier, Nagel, Stec, Gilzene, and Arsen, 2019, p 3).

For example, in 2015 Jackson, Johnson, and Persico used event-study and instrumental variable models to analyze the progress of 15,000 students into adulthood, finding for children from low-income families, increasing per pupil spending yields large improvements in educational attainment, wages, family income, and reductions in the annual incidence of adult poverty. (Jackson, Johnson, and Persico, 2016, p. 212). Specifically, Jackson and his colleagues found that for low-income children, a 10% increase in per pupil spending each year for all 12 years of public school is associated with 0.46 additional years of completed education, 9.6% higher earnings, and a 6.1 percentage point reduction in the annual incidence of adult poverty. (Jackson, Johnson, and Persico, 2016, p. 160).[38] They found that a 25% increase in per pupil spending throughout the school-age years could eliminate the attainment gaps between children from low-income and nonpoor families. (Jackson, Johnson, and Persico, 2016, p. 214). Jackson and his colleagues concluded that "Our findings show that increased per pupil spending induced by [state finance reform] policies did improve student outcomes and helped reduce the

[38] For all students Jackson and his colleagues found that "Event-study and instrumental variable models reveal that a 10 percent increase in per-pupil spending each year for all twelve years of public school leads to 0.27 more completed years of education, 7.25 percent higher wages, and a 3.67 percentage-point reduction in the annual incidence of adult poverty." (Jackson, Johnson, and Persico 2016, p. 157) Furthermore, Jackson and his colleagues found that 10 percent more spending in all 12 grades increased average years of completed schooling by 0.31 years.

intergenerational transmission of poverty. Increased school funding alone may not guarantee improved out- comes, but our findings indicate that provision of adequate funding may be a necessary condition." Ibid. Mchael Rebell cited the study of Jackson and his colleagues for the proposition that that "Equity based-based court mandated reforms successfully reduced spending gaps between high-and low-income areas, but they accomplished this mostly by redistributing existing levels of funding. Adequacy-based litigations also effectively reduced spending gaps, but they tended to do so by increasing school spending over all and without reducing spending levels in higher spending districts." (Rebell, pp. 12-13, 2019).

The work of Jackson and his colleagues introduces a new facet in that they state that "Increases in education spending could have diminishing marginal impacts, meaning that to obtain learning gains of the same magnitude, even higher increases in spending might be required." (Rebell, 2019, p 13.) Going forward, even more substantial increases in education funding may be required to improve the academic performance of economically disadvantaged students.

There are other studies that used quasi-experimental statistical methods and found increasing educational resources have positive effects on academic achievement. Leslie Papke used both fixed-effect (FE) and fixed-effect instrument variable (FE-IV) models to estimate the impact of spending changes of Proposal A on the Michigan Educational Assessment Program (MEAP). Papke's FE model showed that a ten percent spending increase raised pass rates by 2.5 percentage points, while the FE-IV model found that a 3.7 percentage point increase pass rates from a ten percent increase in funding. (Pepke, 2008). In 2011, Joydeep Roy updated and refined Papke's research and concluded that Proposal A reduced spending inequality in Michigan to a greater degree than the average among states in which courts mandated funding reform, such as

the first Serrano case in California. Roy found that increases in school spending, especially in less affluent districts, improved student outcomes. (Roy, 2011).

In 2016, Julien Lafortune, Jesse Rothstein, and Diane Schanzenbach conducted a study that measured representative samples of scores on the National Assessment of Educational Progress (NAEP) following school finance reform. Lafortune and his colleagues used the NAEP data to construct a state-by-year panel of relative achievement in low-income school districts, covering 1990 to 2011. (Lafortune, Rothstein, and Schanzenbach, 2018, p. 4).

First, Lafortune and his colleagues found that school finance reforms enacted during the adequacy era markedly increased the progressivity of school spending—meaning "Schools used these additional funds to increase instructional spending, reduce class size, and for capital outlays." (Lafortune, Rothstein, and Schanzenbach, 2018, p. 23). Second, they found the reforms increased the absolute and relative achievement of students in low-income districts. Specifically, they found that the impact of $1,000 increase in annual expenditures per pupil results in from 0.12 to 0.24 standard deviations higher test scores. With regard to students in the economically disadvantaged districts, Lafortune and his colleagues stated that "[School finance reform] (SFR) raises achievement in a district with log average income one point below the state mean, relative to a district at the mean, by 0.1 standard deviations after 10 years." (Lafortune, Rothstein, and Schanzenbach, 2018, P. 23). Lafortune and his colleagues pointed out that "Chetty et al. (2011) estimate that a 0.1 standard deviation increase in kindergarten test scores translates into increased earnings in adulthood with present value of $5,350 per pupil. This implies a benefit-cost ratio of 1.5, even when only earnings impacts are counted as benefits." (Lafortune, Rothstein, and Schanzenbach, 2018, p. 24). Lafortune and his colleagues summarized the study by stating that "The average finance reform, which we interpret to involve roughly unconstrained increases in

resources, though in some cases the additional funds were earmarked for particular programs or tied to other reforms, led to a productive (though perhaps not maximally productive) use of the funds." Ibid. They found that in both absolute and relative terms, the achievement of students in low-income districts increased. Lafortune, Rothstein and Schanzenbach concluded that "Money can and does matter in education…Courts and legislatures can evidently force improvements in school quality for students in low-income districts." Ibid.[39]

There are several recent studies that utilized the differences-in-differences (DD) estimation strategy to investigate whether student finance reforms improve student outcomes. Downes, Zabel, & Ansel (2009) found that the Massachusetts Education Reform Act (MERA) finance equalization reform was "successful in raising the achievement of students in the previously low-spending districts." Using a DD estimation, Downes and Zabel demonstrated that MERA played a significant role in equalizing education spending and keeping constant the previously diverging achievement gap between the poor and rich districts (Downes and Zabel, 2009).[40] "The simplest means for determining the initial, short-term, impact of MERA is the difference-in-difference approach… The result is a measure of difference in the average change in achievement between 1992 and 1994 for the Low-Spend_92 and High-Spend_92 districts. If the reform was effective in raising achievement of the less advantaged districts, then we expect that this difference will be positive." (Downes, Zabel, and Ansel, 2009).

[39] Lafortune, Rothstein, and Schzenbach indicated that there was a caveat to this conclusion, in stating that since "The average low-income student does not live in a particularly low-income district, so is not well targeted by a transfer of resources to the latter. Thus, we find that finance reforms reduced achievement gaps between high- and low-income school districts but did not have detectable effects on resource or achievement gaps between highand low-income (or white and black) students." (Lafortune, Rothstein, and Schzenbach 2018. P. 24).

[40] In the Downes and Zabel study, the DD estimators were not significant at first in the regression without controlling each district's time trend for student performance, but the estimators became significant after considering the widening achievement gap among districts prior to the MERA.

The identification strategy utilized by Lafortune, Rothstein, Schzenbach (2018); and Jackson, Johnson, and Persico (2016); and Downes and Zabel (2009) were all similar in that they engaged in an event study method using the exogenous nature of the timing and location of the school finance reforms after 1990.

In 2018, Jaeho Kim used a DD estimation and found that MERA decreased the achievement, spending gap, and income segregation between poor and rich districts in Massachusetts. Kim found that there was a marginal reduction in the achievement gap between quartiles with the second and third highest expenditures per pupil relative to the quartile with lowest expenditures per pupil, with the greater impacts on fourth grade verbal test scores. (Kim, 2018).

Min Sun, Emily Penner, and Susan Loeb used a DD model to estimate program impacts on multiple dimensions across the 3-year duration of a School Improvement Grant (SIG) award in one urban school district. Sun and her colleagues found that SIG interventions significantly increased average student achievement in math and ELA and that the treatment effect is most pronounced in the third year of the intervention (Sun, Penner, and Loeb, 2917, p. 623).

In a fascinating application of the DD estimation, Caroline Tompson used the model to estimate the causal impact exposure to fracking has on the public school system at a county level via property tax revenues, enrollments, number of full-time equivalent teachers, instructional salaries, and outlay for construction and instructional equipment. Tompson found that for counties with high exposure to fracking there is an average increase in property tax revenues by 29.5%, an increase in primary enrollment by 25.44 students, and an average decrease of 3.665 primary full time equivalent teachers (Tompson, 2020, p. 13).

Joshua Hyman found that students exposed to $1,000 or approximately 10 percent more spending per year experienced a 3.0 percentage point (7 percent) increase in college enrollment, and a 2.3 percentage point (11 percent) increase in degree receipt. (Hyman, 2017, p. 257)[41] Hyman stated that "The larger percent increase in degree receipt than enrollment suggests that many of the students induced into college by the additional spending persisted to completion, but also that the additional spending boosted the graduation rate for students who would have enrolled in the absence of the spending increase." Ibid. Hyman stated that "These effects were concentrated among non-rural, low-poverty, high-achieving school districts." (Hyman, 2017, p. 278).

Hyman concluded that "This paper provides important evidence that increases in school spending improve students' long-run outcomes that are of ultimate concern to policymakers." (Hyman, 2017, p. 278). Hyman also indicated that "Local government responses to education policies imposed on them by higher levels of government can result in benefits accruing to students who may not have been the intended beneficiaries of the policy. (Hyman, 2017, p. 279) Guryan (2001) previously found that in Massachusetts an additional $1,000 in low-spending districts increased achievement by between 0.3 and 0.5 standard-deviations. However, Guryan found that increased spending from MERA improved 4th grade test scores but not 8th grade test scores.

Chris Candeleria and Kenneth Shores found that seven years after reform, the highest poverty quartile in a treated state experienced an 11.5 percent to 12.1 percent increase in per-pupil spending, and a 6.8 to 11.5 percentage point increase in graduation rates. (Candeleria and

[41] Hyman used district foundation allowances under Proposal A as an instrument (IV) to predict district spending in order to guard against potential bias in his results. He further mitigated potential bias by tracking students across grades and districts and by controlling for student's previous achievement.

Shores, 2019, p.31). Specifically, Candeleria and Shores stated that "In the first year after reform, graduation rates in the [highest-poverty districts] in quartile four increased modestly by 2.0 percentage points. By treatment year 7, however, graduation rates increased by 11.5 percentage points, which is significant at the 0.1 percent level. The dynamic treatment response pattern across all 7 years is consistent with the notion that graduation rates do not increase instantaneously; longer exposure to increased revenues catalyzes changes in academic outcomes." (Candeleria and Shores, 2019, p.47).

Candelaria and Shores found consistent evidence that these court cases did have positive effects on revenues and graduation rates. They concluded that "High poverty districts in states undergoing reform increased revenues and graduation rates relative to high poverty districts in non-treated states; in addition, these effects were relatively more equalizing compared to trends taking place in other states across the United States." (Candeleria and Shores, 2019, p.60). They pointed out that "The marginal effect of an additional dollar of spending is more productive in poor districts than it is in non-poor districts… This suggests that there may be upper limits to spending, but that these limits have not been reached in high poverty districts in the United States. Ibid.

Competitive Effects

Randall Reback pointed out that, "A change in education policy can not only influence the targeted market but can also substantially affect supply or demand in other markets." (Reback, 2007, p. 301). He further stated that, "School choice programs can erode differences in house prices across school districts by weakening the link between house prices and local school quality." (Reback, 2007, p. 302). Reback examined the competitive effects of Minnesota's statewide open enrollment program and found that "Greater initial outflows of transfer students caused house prices to rise, because households could live in that district but enjoy schooling opportunities beyond its boundaries. Conversely, greater inflows of transfer students caused house prices to decline, because households did not necessarily have to pay a premium to use a regionally popular district's schools."[42] Ibid.

Babington and Welsch also focused on the competitive effects of Minnesota's statewide open enrollment program that allows students to attend districts outside of where they reside. They stated that, "First, once controlling for observed and (time invariant) unobserved effects, districts that have more students transferring out have higher reading test scores in the subsequent year; although these numbers are quantitatively small. We interpret these results as evidence that districts will respond to competitive pressures from open enrollment and improve reading test scores." (Babington and Welsch, 2017, p. 432).

Card, Dooley, and Payne examined the effects of school competition in Ontario, Canada, which operates two publicly funded school systems: public schools that are open to all students, and separate schools that are limited to children with Catholic backgrounds.

[42] Specifically, Reback found that, "A one standard deviation change in the initial outgoing/incoming transfer rate caused a 3 percent increase/decrease in residential property values by the end of the eight-year period." (Reback 2007, p. 302).

"The system is effectively a voucher program with two competing suppliers. Although choice is limited to Catholics, the financial incentives to compete for Catholic students potentially impact the quality of schooling for *all students*." (Card, et al, 2010, p. 151). Card and his colleagues found that, "Comparing markets where only 20 percent of children have choice to markets where 60 percent can choose between systems, we estimate that the gain in test scores between third and sixth grades is increased by 0.03-0.05 of a standard deviation."[43] (Card, et al, 2010, p. 174). Card and his colleagues also found that potential competition raises test scores in both the public and separate systems, with somewhat larger impacts for public school students.

III. Four Hypotheses Responding to Research Questions

I have developed four separate hypotheses that directly respond to four research questions. The first two hypotheses revolve around funding and resources since the Abbott v. Burke Supreme Court decision in 1997. The second two hypotheses pertain to the academic performance of economically disadvantaged students in Abbott districts since Abbott v. Burke.

[43]Card and his colleagues further stated that "Our estimates imply that extending competition to all students would raise average test scores in sixth grade by 6 percent to 8 percent of a standard deviation." (Card, et al 2010, p. 150).

2.8 *First Hypothesis: The leading case of Abbott v. Burke and subsequent reform policies stemming from the litigation increased funding for economically disadvantaged children in Abbott districts.*

As a point of background, recent studies indicate that school finance reforms increased spending per pupil more in low-income districts relative to high-income districts. Lafortune, Rothstein and Schanzenbach stated that "[School finance reforms] are associated with large increases in funding in low-income school districts." (Lafortune, Rothstein, and Schanzenbach, 2018. p. 14). The researchers found that in the lowest income quintile of districts, following reforms, state revenues increase substantially, by roughly $1,300 in the fourth post-event year. (Lafortune, Rothstein, and Schanzenbach, 2018. p. 11, figure 3).

Shores, Candelaria, and Kabourek estimated a standard difference-in-differences model and found that school finance reforms between 1990 and 2014 increased expenditures per pupil by about 9.5 percent, on average, in low-income districts. (Shores, Candelaria, and Kabourek, 2019, p.31).

2.9 Why analyze equity in New Jersey?

New Jersey has been more involved with school finance litigation than any other State. In 1973, the New Jersey Supreme Court held in Robinson v. Cahill that the state constitution called for a "thorough and efficient system of education of free public schools for all children between the ages of 5 and 18." Since then, in the Robinson and Abbott cases, the New Jersey Supreme court has issued more than 30 decisions regarding school finance. [44]

In 1990, the New Jersey Supreme Court in Abbott II significantly expanded Robinson's scope, but targeted its efforts on the poor "special needs" urban districts. The court stated that:

[44] In 1976, the high court shut down New Jersey's public schools for eight days after the lawmakers failed to raise taxes to pay for the new funding formula that was mandated by Robinson v. Cahill. Judicial pressures from the school funding cases also resulted in the state's first income tax.

In order to provide a thorough and efficient education in these poorer urban districts, the State must assure that their educational expenditures per pupil are substantially equivalent to those of the more affluent suburban districts, and in addition, their special disadvantages must be addressed (Abbott v. Burke, 119 N.J.287, 575 A2d 359, 385 (1990)).

2.10 Why analyze Abbott v Burke?

Abbott v. Burke is the watershed case on equity. The Abbott case has been acknowledged by one of the nation's leading newspapers as "maybe the most significant education case since the Supreme Court's desegregation ruling nearly 50 years ago." (New York Times, February 9, 2002).

As of 2015, Abbott school districts educated 307,512, or 22 percent, of New Jersey's 1,400,471 students, according to the 2014–15 Local Education Agency Universe file. Of the 2,599 New Jersey schools in the 2014-15 School Universe file, 479 schools are within Abbott districts. As previously mentioned in the Statement of Purpose, there is a deep political divide between the thirty-one Abbott districts that receive in the range of 50 to 54 percent of state aid for K-12 students and non-Abbott low socioeconomic districts, working class and middle-class districts. The non-Abbott low socioeconomic districts, working class, and middle-class districts assert that they should receive a higher share of state aid for education,

As a point of background, subsequent to the Abbott v. Burke decision in 1997, state aid in the Abbott districts increased over 100% between FY 1997 and FY 2005, from approximately $1.96 billion to approximately $4 billion in FY 2005. Between FY 1997 and FY 2005, the Abbott districts received State aid increases at a far greater rate than the low socioeconomic

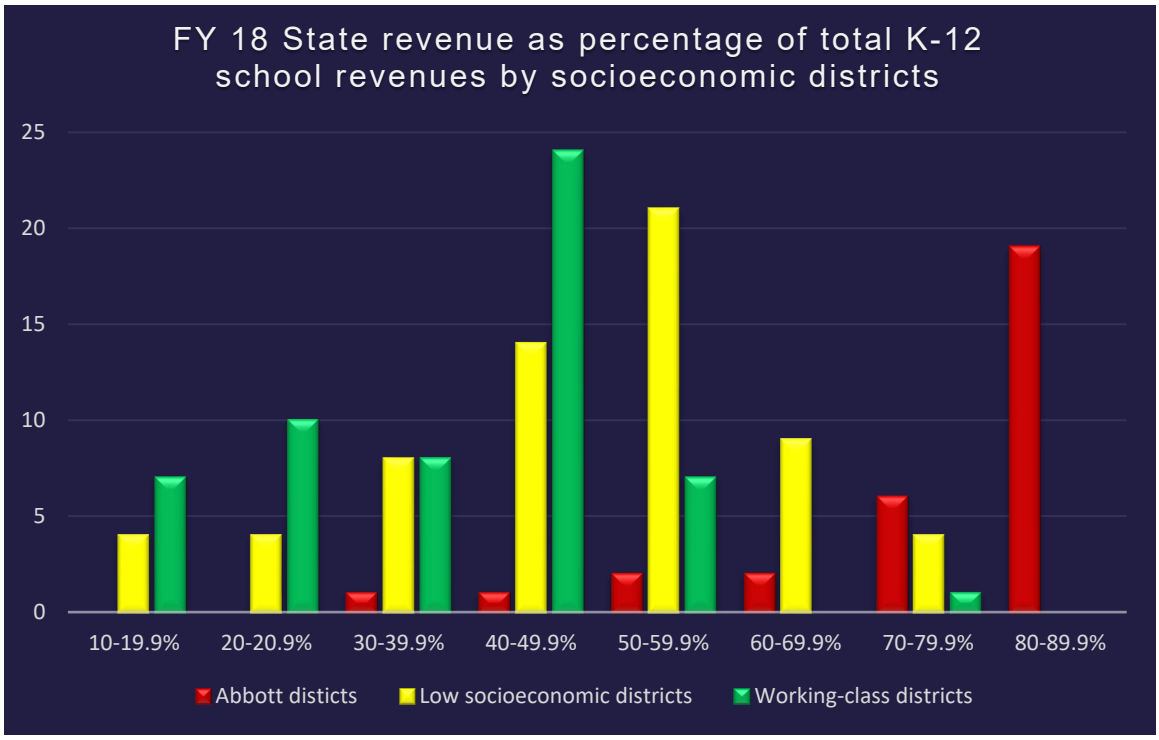
districts, working class and middle-class districts.[45] By FY 2020, Abbott districts received $4.73 billion in State aid. (New Jersey State Department of Education, Office of School Funding (2005)

As previously mentioned in the Statement of Purpose, the Abbott districts are receiving a disproportionate share of State education revenues. Specifically, in FY 18 nineteen Abbott districts received 80 percent or more of total revenues for education from State aid. See figure 2-2 below. Six Abbott districts received between 70 to 79.9 percent of revenues from State aid; two districts received between 60 to 69.9 percent of revenues from State aid; two districts received between 50 to 59.9 percent of revenues from State aid; and two Abbott districts received less than 50 percent of revenues from State aid. (Local Education Agency (School District) Finance Survey (F-33) Data, v.1a—Provisional; https://nces.ed.gov/ccd/files.asp#Fiscal:1,Page:1

In stark contrast, there were not any low socioeconomic non-Abbott districts nor any working-class districts that received 80 percent or more of total revenues for education from State aid.

[45] New Jersey State Department of Education, Office of School Funding (2005)

Figure 2-2 New Jersey State revenues for public elementary and secondary schools as a percentage of total public school revenues, by three socioeconomic classes: FY 18



Source: Local Education Agency (School District) Finance Survey (F-33) Data, v.1a—Provisional

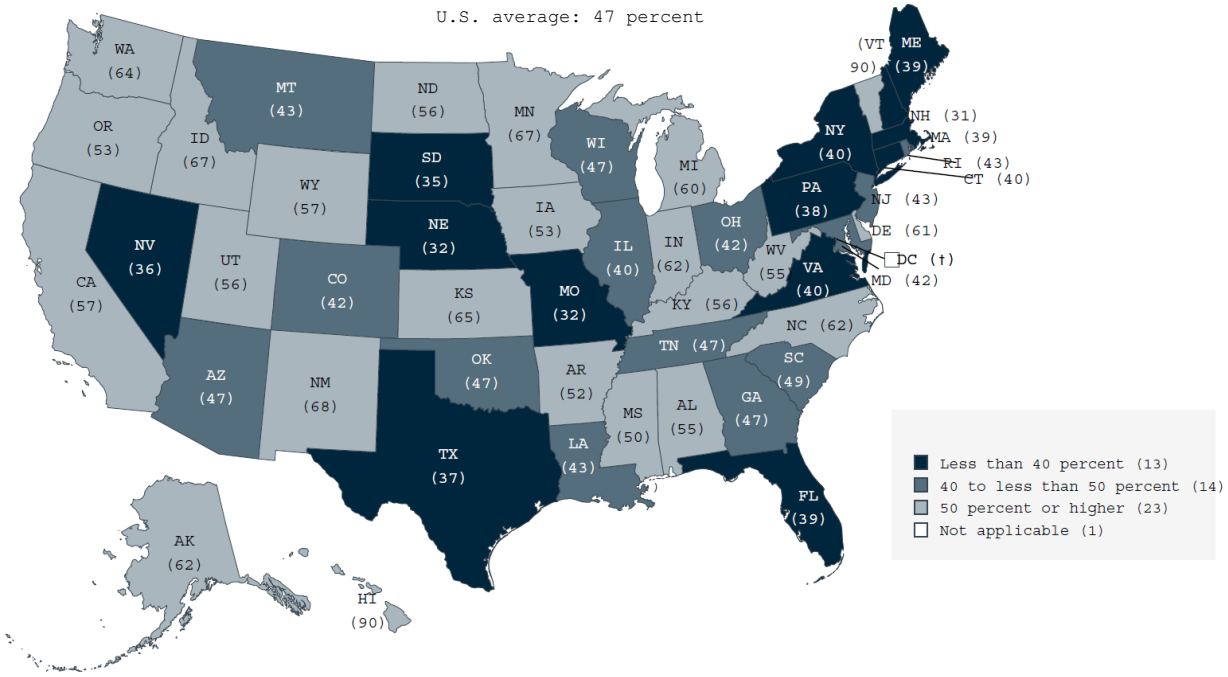
The majority of low socioeconomic districts (twenty-one) received between 50 to 59.9 percent of revenues from State aid. Four low socioeconomic districts received between 70-79.9 percent of revenues and nine districts received between 60-69.9 percent of total revenues for education from State aid.

The majority of working-class districts (twenty-four) received between 40-49.9 percent revenues for education from State aid. Seven working-class districts received between 50 to 59.9 percent of revenues for education from State aid.

In comparing State revenues for elementary and secondary schools at the national level with Abbott districts, the disparity is striking. Thirty Abbott districts received a higher percentage of State revenues for elementary and secondary schools than the national average of 47 percent in FY 18. Furthermore, thirty Abbott districts received a higher percentage of State

revenues for elementary and secondary schools than the state average of 43 percent in New Jersey. See figure 2-3 below.

Figure 2-3 State revenues for public elementary and secondary schools as a percentage of total public school revenues, by state: FY 18



NOTE: All 50 states and the District of Columbia are included in the U.S. average, even though the District of Columbia does not receive any state revenue. The District of Columbia and Hawaii have only one school district each; therefore, the distinction between state and local revenue sources is not comparable to other states. Categorizations are based on unrounded percentages. Excludes revenues for state education agencies.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "National Public Education Financial Survey," 2017–18. See *Digest of Education Statistics 2020*, table 235.20.

This dichotomy in the amount of State revenues allocated for elementary and secondary schools between the Abbott Districts and low socioeconomic as well as working class districts is the source of continuing controversy in New Jersey.

Abbott v. Burke (1997) has a direct impact on equalization aid and ultimately the local cost share or local fair share in New Jersey. "A district's local effort, or local fair share, is calculated by applying a statewide property tax rate, or multiplier, to its equalized property value

and a statewide income tax rate, or multiplier, to its personal income, and dividing the sum of these two products by two." (Goertz and Goertz 1990. p. 109).[46] The following equation applies: (Property Value * Property Rate) + (Income * Income Rate)]/2. (N.J. School Board Association 2020); https://www.njsba.org/news-information/parent-connections/school-finance-101/.

The New Jersey State School Board Association states that "Local cost share is the difference between a district's adequacy budget and equalization aid…In reality, the State derives what is an adequate budget; then determines how much equalization aid can be provided. The difference is left to the school district to address through the local cost share."[47] (2020 N.J. School Board Association).

There is a significant funding controversy between middle-class districts and Abbott districts based on the concept of the local fair share. The question is whether Abbott districts are contributing their local fair share to elementary and secondary schools? Advocates of improving equity for all districts across the State assert that some Abbott districts, such as Jersey City, should increase their local revenues to meet their local fair share. One stakeholder stated that, "Jersey City's $15,452 in local fair share per student exceeds the State median of $14,689 per student. For purposes of comparison, Jersey City's Local Fair Share is similar to that of West Orange ($15,694); Haddonfield ($15,235); Flemington-Raritan ($15,626); and Metuchen ($15,709)." New Jersey State Education Aid February 18, 2020. http://njeducationaid.blogspot.com/2020/02/the-abbott-districts-in-2020.html. In FY 18, State aid accounted for 76.3 percent of total revenues for elementary and secondary schools in Jersey City (FY 18 School District Finance Survey). By virtue of comparison, in FY 18 State aid comprised 17.7

[46] It is important to note that, "A local district is not required to raise its local fair share to receive aid." (Goertz and Goertz 1990. p. 110).
[47] The Local Cost Share is a recommended funding level used for the calculating of State Aid.

percent of total revenues for elementary and secondary schools in West Orange; 15.3 percent in Haddonfield; 21.3 percent in Flemington-Raritan; and 15.3 percent in Metuchen. It should be noted that this argument does not apply to all Abbott districts, as fifteen of the thirty-one Abbott districts are in New Jersey's bottom one hundred in local fair share per student.

The holding of Abbott v Burke (1997) that Abbott districts must receive the same funding per pupil as students in the two highest socio-economic district factor groups in the State has a direct bearing on how much equalization aid can be offered by the State to all other districts. As previously mentioned in the Statement of Purpose, in FY 20 the equalization aid available to all non-Abbott districts amounted to $3.98 billion, or 46 percent of total State aid. The balance of $4.73 billion (54 percent) in State aid is currently allocated to the thirty-one Abbott districts. (New Jersey State Department of Education, Office of School Funding, 2020).

Mobility

Mobility is an issue that should also be considered when analyzing the impact of Abbott v. Burke (1997) on all socioeconomic districts within New Jersey. An argument could be made that low socioeconomic families can make the geographic move into the 31 Abbott districts to experience the increased resources for education. People with low incomes may experience constraints on their choices to live in a particular area or to move to another. "High moving costs, strong social ties…racial discrimination, and housing segregation contribute to lower levels of long-distance mobility among low-income households." (Interagency Technical Working Group on Evaluating Alternative Measures of Poverty, 2021, p. 66).

Examples of moving costs include transportation of households, their belongings and storage of those belongings (Amundsen 1985; Tunstall et al. 2013). Dawkins points out that social ties may play role in migration decisions when families must contend with losing economic and social supports of their extended families and communities in their origin location and weaker ties in their destination locations (Dawkins 2006).

Racial discrimination may not be a factor in families moving into Abbott districts as the majority of those districts have a high minority population. However, families in low socioeconomic and working-class districts may not have the savings to make the geographic move into those districts. For example, in a recent study by the Urban Institute, almost half (49.5%) of families below the Federal Poverty Line said they were not confident they could come up with $400 to meet an unexpected expense (Brown and Braga 2019, p. 5).

2.11 Overview of the Abbott Decisions

In 1996, the New Jersey Department of Education developed a "costing out model" intended to determine the cost of a "thorough and efficient education" for each student.[48] However the legislature did not adequately address the lower spending levels in poverty stricken districts. The failure of the legislature to address the equity issue for economically disadvantaged students led to Abbott IV decision. As previously mentioned, in the seminal case of Abbott v. Burke, the New Jersey Supreme Court held that students in 28 "special needs" districts must receive the same funding per pupil as students in the two highest socio-economic district factor groups in the State. 149 N.J. 145 (1997) (Abbott IV). In Abbott IV, the New Jersey Supreme Court held that the regular education funding provisions of the Constitutional Educational Improvement and Financing Act (CEIFA) were unconstitutional as applied to the special needs districts. The court stated that "The New Jersey Constitution mandates that: The Legislature shall provide for the maintenance and support of a thorough and efficient system of free public schools for the instruction of all the children in the State between the ages of five and eighteen years. [N.J. Const. art. VIII, § 4.]

The court reasoned that the CEFIA does not adequately address the unique educational disadvantages facing children attending schools in the poor urban districts Abbott v. Burke, 149 N.J. 145 (1997). The court directed the legislature to assure by the commencement of the 1997-1998 school year that per-pupil expenditures in the poor districts (which were to be referred to as

[48] The costing model concluded that the state's poorest urban districts had sufficient funding and that high-performing suburban school districts were spending wastefully. In response, numerous suburban superintendents testified before the legislature that the impact of funding cuts would be severe on their programs and students. Later that year, the legislature grandfathered the suburban spending into its education funding bill. www.schoolfunding.info/states/nj/lit on March 10,2006

Abbott districts) were equivalent to the average per pupil expenditures in the wealthy suburban districts.

New Jersey utilizes District Factor Groups[49] (DFGs), which represent an approximate measure of a community's relative socio-economic status (SES) (New Jersey Department of Education, 2005). See Analytic Approach, infra. The DFGs were first developed in 1975 for the purpose of comparing students' performance on statewide assessments across demographically similar districts. Subsequent to the Abbott IV ruling in 1997, the DFGs were also used to define the group of school districts in which the Abbott v. Burke parity remedy would be based. (New Jersey Department of Education, 2007).

The Court held that as a form of interim relief to the Abbott districts, the state must provide enough aid to those districts such that they are able to spend as much as the districts classified as DFG groups "I" and "J."

At the time of the Abbott IV decision in New Jersey there were twenty-eight districts identified as Abbott; there are currently thirty-one Abbott districts.[50] The state legislature added Neptune and Plainfield in 1998 and Salem City in 2004.[51] All thirty-one of the Abbott districts are the subject of this study.

[49] The DFG factor groups were first created in 1975 and were recalculated with the information gathered by the 2000 census. To calculate these groups New Jersey concentrates on three steps: first they calculate the SES score (socio-economic statistic) for each student, then they calculate the weighted amount for each student using 6 indicators about their origin and then New Jersey concentrates on how many students with these SES weighted scores are in each district. (New Jersey Department of Education, 2007).

[50] The Abbott districts include Asbury Park, Bridgeton, Burlington, Camden, Orange, East Orange, Elizabeth, Garfield, Gloucester, Harrison, Hoboken, Irvington, Jersey City, Keansburg, Long Branch, Millville, Neptune, New Brunswick, Newark, Passaic, Paterson, Pemberton, Perth Amboy, Phillipsburg, Plainfield, Pleasantville, Salem, Trenton, Union, Vineland, and West New York (New Jersey Department of Education, 2005).

[51] Several rural school districts tried to qualify for additional state funding as Abbott districts, in Keaveney v. New Jersey Department of Education, 2000 N.J. AGEN LEXIS 814 (Dec. 26, 2000). One was approved.

a) The Supreme Court Mandates Preschool Requirements in 1998 and 2000

In Abbott V the court held that in part that the Commissioner of Education shall implement whole-school reform and full-day kindergarten and half day pre-school programs for three and four year-olds as expeditiously as possible. 153 N.J. 480 710 A.2d 450, 473. (1998). The court also held that the Commissioner implement school to work and college transition programs, alternative schools, secure funds to cover the cost of remediating infrastructure deficiencies in Abbott schools, and initiate effective managerial responsibility over school construction. 153 N.J. 480 (1998).

As previously mentioned, the New Jersey Supreme Court is one of the few state courts to have been involved in programmatic oversight, while being careful to "not assume the responsibility for independently making the critical education findings." Abbott v. Burke, 149 N.J. 145, 693 A.2d 417, 444 (1997). With the Abbott V ruling, New Jersey became the first state to mandate early education, starting at age 3, for children "at risk" of entering kindergarten or elementary school cognitively and socially behind their peers. The Court also ordered that New Jersey undertake the most extensive construction program in the country to ameliorate the deficient condition and quality of school buildings in economically disadvantaged neighborhoods. The New Jersey Supreme Court is also one of the few courts that has included such specific requirements in its orders and retained jurisdiction to review the State's implementation efforts. (Rebell, 2009, p. 75)

In Abbott VI the New Jersey Supreme Court spelled out the preschool requirements in more detail, including substantive educational standards, certified staff, and a maximum student/teacher ratio of 15:1. Abbott v. Burke, 748 A.2d 82 (2000). In Abbott VII, the court required the state to fully fund the construction of any new classrooms needed to correct capacity

deficiencies. Abbott v. Burke, 751 A.2d 1032 (2000). In 2002, the New Jersey Supreme Court held in part that if the districts do not have at least 50% of the projected preschool population in approved programs, the local board was required to develop a corrective plan for approval by the Commissioner. Abbott v. Burke, 170 N.J. 537 (2002). The court also held that the DOE must work with districts to inform parents of preschool children about preschool opportunities in Abbott districts, particularly in districts that need corrective action plans. Ibid.

The fact that the New Jersey has been engaged in programmatic oversight in equity cases and retained jurisdiction to review state implementation efforts forces the legislative and executive branch to develop substantive education policies that provide all students a thorough and efficient education guaranteed by the New Jersey state constitution regardless of their ethnic backgrounds and socioeconomic status.

2.12 School Funding Reform Act of 2008

The disparity between the amount expended per student by the Abbott districts and lower socioeconomic non-Abbott districts as well as middle class districts is very substantial. The disparity in expenditures per pupil raises the issue whether lower socioeconomic non-Abbott districts and middle-class districts are receiving an equitable share of state aid to education? The School Funding Reform Act of 2008 (SFRA) attempted to remedy these differences by establishing an equitable state-wide funding scheme that applied to all districts in the state.

SFRA allocated state resources to school districts, while also requiring certain levels of funding at the local level. At the core of SFRA is the Adequacy Budget. The Adequacy Budget is wealth equalized, which means that it is based on the community's wealth and ability to provide funding through local resources. Under SFRA, the base per-pupil amount for 2008-09

was $ 9,649, which was adjusted by the Consumer Price Index (CPI) each year over the following two years. Once the base per-pupil amount is determined, it is adjusted upward using specific weights. The formula includes additional weights for students with special needs. In 2009, the Court modified the previous Abbott cases, holding that the School Funding Reform Act of 2008 (SFRA) funding scheme based on the socioeconomic needs of each individual student, rather than geography, satisfied the thorough and efficient clause of the New Jersey constitution. Abbott v. Burke, 199 N.J. 140 (2009). The State was released from the Court's prior remedial orders concerning funding for students in Abbott districts, including the requirement that Abbott districts be provided parity aid and supplemental funding. Abbott v. Burke, 199 NJ 140 (2009).[52]

The court held that the SFRA funding formula may be applied in the Abbott districts along with two caveats. Abbott v. Burke, 199 N.J. 140 (2009). The finding of "constitutionality is premised on the expectation that the State will continue to provide school funding aid during this and the next two years at levels required by SFRA's formula each year. Our holding further depends on the mandated review of the formula's weights and other operative parts after three years after implementation." Abbott v Burke, 199 N.J. at 145 (2009). The rationale for the court's decision included shifting demographics across the state. The court stated that, "There have been significant demographic changes among school districts in terms of the distribution of at-risk pupils and changes in the level of State-provided education funding." Abbott, 199 N.J. at 145 (2009). Although the 2009 Abbott decision equalized the expenditures for economically

[52] Although the Special Master at the lower court recommended that supplemental funding continue to Abbott districts, during and until the three year look-back review of SFRA. The NJ Supreme Court stated that

disadvantaged students whether they reside in Abbott or non-Abbott districts, it did not augment funding for middle class students.

The court stated that "The Court's one goal has been to ensure that the constitutional guarantee of a thorough and efficient system of public education becomes a reality for those students who live in municipalities where there are concentrations of poverty and crime. Every child should have the opportunity for an unhindered start in life--an opportunity to become a productive and contributing citizen to our society." Abbott v Burke, 199 N.J. at 145 (2009).[53]

In 2011 the New Jersey Supreme Court ordered the Governor to provide funding for Abbott Districts in accordance with the School Funding Reform Act of 2008

The cuts to education budgets were at the front and center of the public policy agenda in wake of the economic downturn in 2009-10. In 2010, Governor Christie cut state aid to school districts. The New Jersey annual state budget was reduced from $33.9 billion in 2009 to $28.4 billion in 2011. (N.J. State Department of Treasury). Governor Christie's first education budget was $1.6 billion short of what SFRA considered "adequate" for about 1/3 of the 591 districts in the 2010-11 school year. In June 2010, the NJ Legislature adopted the FY2011 budget, cutting over $1.1 billion, or almost 15%, in state aid from the SFRA formula.

In January of 2010, the New Jersey Supreme Court issued an order for a remand hearing before the Honorable Peter E. Doyne. Judge Doyne was asked to consider one issue: "... whether

[53] "This funding formula was designed to operate as a unitary whole and, in order to achieve its beneficial results, it must be allowed to work as it was intended. The many layers of costs that were factored into the base per-pupil amount, the added weights, and the many types of additional aid that are provided in order to transition districts to SFRA's funding levels, are all designed to provide sufficient resources and at the same time to incentivize fiscal efficiency. Abbott, 199 N.J. at ___ (2009). The court cited the fact that the Abbott districts would receive Title I funding, Individuals with Disabilities Education Act (IDEA), and funds under the Federal American Recovery & Reinvestment Act of 2009. The legislature was mandated to fully fund 31 urban Abbott districts and 200 districts under the "adequacy" level pursuant to SFRA.

school funding through SFRA, at current levels, can provide for the constitutionally mandated thorough and efficient education for New Jersey school children." In March of 2011, Judge Doyne issued his report, finding that the SFRA formula was underfunded by $1.6 billion, or 19%, and that districts were unable to provide the programs necessary for students to meet State academic standards, particularly at-risk students.[54]

In May, 2011, the New Jersey Supreme Court reaffirmed the Abbott IV ruling and ordered New Jersey to provide $500 million to exclusively urban Abbott districts in the 2011-12 school year, rather than funding the needs of the individual students Abbott v. Burke, 206 N.J. 332 (2011). The court held that the funding to the Abbott districts in FY 2012 must be calculated and provided in accordance with the School Funding Reform Act of 2008. The relief was limited to the plaintiff class of children from Abbott districts for whom the Court has a historical finding of constitutional violation and for whom the court has had specific remedial orders in place through Abbott XX. Abbott v. Burke, 206 N.J. 332 (2011).

The Abbott decision in May of 2011 reignited the battle between residents of low socioeconomic non-Abbott districts as well as middle-class districts and the Abbott districts for education dollars. The low socioeconomic non-Abbott districts and middle-class districts argue that they lack substantial property tax wealth and do not receive special state assistance. Professor Tractenberg, one of the original attorneys who brought the Abbott case, stated that "The (2011 Abbott) ruling threatens to resurrect the old suburban-urban 'our money is going to their children split…Whatever deficiencies the (SFRA) funding formula had, it did unify all at-risk children in the state." (Education Week, June 8, 2011).

[54] https://edlawcenter.org/litigation/abbott-v-burke/abbott-history.html.

b) Bacon v. New Jersey Department of Education

In 2014, sixteen non-urban low socioeconomic districts brought an action in Bacon v. New Jersey Department of Education challenging New Jersey's school funding formula as unconstitutional as the State funding formula did not provide a thorough and efficient education for all students in the State. The sixteen districts did not include any Abbott districts.[55] The plaintiffs sought an order from the state Superior Court to enforce needs assessments for these districts that had been undertaken by the state education department. The lower court held that the district-specific needs assessments which they sought to enforce did not require the Department to fully fund the districts under the SFRA or otherwise provide for specific relief. In 2015, the Appellate Division of the Superior Court affirmed a lower court ruling that district-specific needs assessments did not require the Department to fully fund non-Abbott low socioeconomic districts under the SFRA.

c) In FY 19 the NJ State Budget Increased State Aid under SFRA

In Fiscal Year (FY) 19 (school year 2018-19), the NJ State Budget provided a $351 million increase in state aid under the SFRA, which was the first substantial increase within nine (9) years.

[55] The Bacon districts include Buena Regional, Clayton, Commercial, Egg Harbor, Fairfield, Hammonton Township, Lakehurst, Lakewood, Lawrence, Little Egg Harbor, Maurice River, Ocean Township, Quinton, Upper Deerfield, Wallington, and Woodbine.

2.13 *Second Hypothesis-Increased resources from Abbott v. Burke directly reach students in the classroom through instruction, instructional staff support, and student support services*

Lafortune, Rothstein and Schanzenbach pointed out that "A natural question is how the additional funds are spent." (Lafortune, Rothstein, and Schanzenbach, 2018, p. 14). Increased funding from Abbott v. Burke reaches students in the classroom through the combination of current instruction expenditures, instructional staff support expenditures, and expenditures for student support services. In light of publicity that leadership and management are crucial factors that impact the efficiency of providing education for economically disadvantaged children subsequent to Abbott v. Burke, it is imperative to analyze the percentage of resources that actually make it into the classroom and/or for student support.

As previously discussed, Lafortune and his colleagues found schools used additional funds from school finance reforms to increase instructional spending, reduce class size, and for capital outlays. (Lafortune, Rothstein, and Schanzenbach, 2018, p. 23).[56] Shores, Candelaria, and Kabourek recently considered the research question of whether states varied in the types of resources they purchased subsequent to state finance reform policies? They stated that "variation in the type of resources states pursue resulting from [school finance reforms] is important as well. Therefore, we evaluate the impacts of [school finance reforms] in multiple domains, including per pupil total expenditures, teacher salaries, capital expenditures, class sizes, full day kindergarten enrollment, and the length of the school year." (Shores, Candelaria, and Kabourek,

[56] Lafortune and his colleagues found substantial impacts of [school finance reforms] on average instructional spending, both overall and in the quartile of disadvantaged districts. They also saw effects on teachers per pupil and total teacher salaries but not on average teacher pay, suggesting that districts use additional funds to reduce class size. They saw large effects on noninstructional expenditures, particularly capital outlays. (Lafortune, Rothstein, and Schanzenbach 2018. p. 14).

2019, p. 6). Shores and his colleagues found that that a 1 percent increase in total spending results in a 2.7 to 3.6 percent increase in capital spending, whereas a 1 percent increase in total spending results in only a 0.5 to 0.84 percent increase in salary spending. (Shores, Candelaria, and Kabourek, 2019, p. 26). The researchers stated that "Thus, new construction is the expenditure of choice for states undergoing [school finance reforms]. Given that the evidence of capital spending's effects on student achievement is mixed, the overall impact of SFRs on student achievement may be weakened." Ibid. Shores and his colleagues pointed out that expenditure preferences—i.e., in states undergoing [school finance reforms], the percent increase for capital spending is larger than it is for salary spending—has not been tested previously. (Shores, Candelaria, and Kabourek, 2019, p. 30).

Being cognizant of definitions of the various functions facilitates understanding of the level of resources that actually reach students. Current instruction expenditures cover the core expenditures that are made directly in the classroom. Current instruction expenditures include expenditures for activities related to the interaction between teachers and students, including salaries and benefits for teachers and teacher aides, textbooks, supplies, and purchased services. (Cornman, Ampadu, Wheeler, Hanak, and Zhou 2019 pg. B-4). [57]

The total amount of money that actually makes it into the classroom is encompassed by the sum of instruction and instructional staff support expenditures.[58] Instruction and instruction related expenditures are more expansive than instruction expenditures in that all instruction related expenditures are accounted for, including salaries and benefits for teachers, teaching assistants, librarians and library aides, in-service teacher trainers, curriculum development,

[57] These expenditures also include expenditures relating to extracurricular and co-curricular activities.
[58] Instructional staff support services cover activities that include instructional staff training, educational media (library and audiovisual), and other instructional staff support services.

student assessment, technology (for students but outside the classroom), supplies, and purchased services related to these activities. Ibid.

Support services is an expenditure function that is divided into seven subfunctions, including student support services, instructional staff support, general administration, school administration, operations and maintenance, student transportation, and other support services. Id. at B-6. Expenditures for student support services includes attendance and social work, guidance, health, psychological services, speech pathology, audiology, and other student support services. Ibid. Expenditures for student support services are separate and distinct from expenditures for instruction and instructional staff. The allocation of additional funds for student support services facilitates an undergirded antecedent educational environment which fosters learning.

Researchers and the media have repeatedly pointed out that the paramount issue is whether Abbott districts effectively utilize the supplemental resources provided by the Abbott v. Burke decision in 1997. Thus, it is important to examine the amount of resources that are utilized for general administration and/or school administration in Abbott districts.[59]

[59] General administration expenditures are for establishing and administering policy to operate a school district. Expenditures include salaries, benefits, purchased services, and supplies for the office of the superintendent and board of education services. (Cornman, et al 2019 p. B-4). School administration expenditures are for directing and managing the operation of a school. Expenditures include salaries, benefits, purchased services, and supplies for the office of the principal and full-time department chairpersons. (Id. at B-6).

2.14 *Third Hypothesis: The Abbott v. Burke decision and ensuing State reform policies improved the academic achievement of economically disadvantaged students in the Abbott districts as compared to other low socioeconomic and working-class districts*

The most important question in this entire study is whether Abbott v. Burke and ensuing State reform policies improved the academic performance of economically disadvantaged students as compared to students in analogous low socioeconomic and working-class districts that are not covered by the court decision?

In Abbott IV, it was clearly the intention of New Jersey Supreme Court to uphold the legislative initiative to institute an evaluation system of student performance. First, the court noted that the Educational Improvement and Financing Act of 1996 (CEIFA) included performance indicators. N.J.S.A. 18A:7F-1 to -33. The court considered the fact that at the time of the decision New Jersey students were not evaluated by the State prior to the eighth-grade level; and that under the proposed system, students would be evaluated at the fourth-grade level (Elementary School Proficiency Assessment, or "ESPA"), the eighth-grade level (Early Warning Test, or "EWT"), and the eleventh-grade level (High School Proficiency Test, or "HSPT"). The court stated that “The proposed evaluation system is essential to the success of the standards based approach effectuated by CEIFA, for it is designed to measure student progress toward achievement of the substantive standards and to provide educators and administrators with the information necessary to take corrective action in those areas where students are failing to achieve at the prescribed levels.” Abbott v. Burke, 149 N.J. 145 (1997).

This is one of several recent studies that analyzes the academic progress of economically disadvantaged students on a longitudinal basis following an equity decision rendered by a state Supreme Court. As previously discussed, recent studies by Lafortune, Rothstein, and

Schanzenbach found that school finance reforms increased the absolute and relative achievement of students in low-income districts. (Lafortune, Rothstein, and Schanzenbach, 2018, p. 23). Jackson, Johnson, and Persico found that increases in expenditures per pupil improved low-income graduation rates and their adult hourly wages. (Jackson, Johnson, and Persico, 2016, p. 157). Hyman found that students with increased resources experienced an increase in college enrollment and degree receipts. (Hyman, 2017, p. 257). Candelaria and Shores found that seven years after reform, districts in the highest poverty quartile experienced an increase in graduation rates. (Candeleria and Shores, 2019, p.47).

In my study, I use the quasi-experimental statistical method of differences-in-differences (DD) to estimate the causal impacts of increased resources from the Abbott v Burke and ensuing State policies on fourth, eighth, and eleventh grade State standardized assessments, graduation rates, SAT scores, and post-high school plans of students in Abbott districts. Furthermore, I use the DD methodology to estimate the causal impacts of specific policies such as the Intensive Early Literacy program on academic achievement of fourth grade students in Abbott districts, as compared to students in other low socioeconomic and working-class districts. The issue of whether Abbott v. Burke and ensuing State reform policies improved the academic performance of economically disadvantaged students goes to the heart of the "Does Money Matter" question.

2.15 *Fourth Hypothesis: Abbott v. Burke and specific policies such as the Intensive Early Literacy program, and Abbott pre-school initiatives have a positive association with the academic achievement of economically disadvantaged students in Abbott districts*

Specific Programs to Implement Abbott v. Burke

Over the course of the Abbott litigation, the court ordered that the State implement a specific set of programs and reforms, including preschool programs; intensive early literacy programs in the elementary grades; smaller class size for high-poverty students, social and health services; new facilities; and a series of required supplemental programs such as full day kindergarten; health and social service referral; alternative education and dropout prevention; violence prevention; early math instruction; as well as school-to-work and college transition programs. (Grubb, 2009, p. 265 citing the Abbott Indicators Projects 2006). Grubb argues that "Abbott seems more promising as a starting point than the lawsuits that create remedies focused on revenues alone." (Grubb, 2009, p. 266).

1. Intensive Early Literacy (IEL) Program

When the Abbott V decision was handed down in 1998, the Abbott districts concentrated on how to decentralize decisions about curriculum and instruction to the school-level, create new school councils, set up school based budgets, and to ensure each elementary school selected a national model of Whole School Reform. In 2003, the New Jersey Attorney general petitioned the New Jersey Supreme Court to replace the remedies of Abbott V with a district by district approach based on pedagogy and early literacy. (The state planned to continue preschool, full day kindergarten, and class size reduction.) In a compromise, the New Jersey DOE and the Education Law Center reconfirmed the Supreme Court mandates for preschool, early literacy, and smaller classes.

In 2003, the state petitioned the New Jersey Supreme Court to replace Abbott remedies with a new approach focused on early literacy. The state planned to continue preschool, full day kindergarten, and class size reduction. Under a mediation agreement, up to one half of Abbott elementary schools could receive a waiver from the Abbott V decision's requirement that all of the Abbott districts must implement Whole School Reform (WSR) models. (Mead, 2009, p. 20). This agreement allowed districts to replace WSR models with district wide implementation of Intensive Early Literacy (IEL) standards, which is a uniform and consistent approach to early literacy instruction.[60] This agreement enabled New Jersey to work with 12 districts to implement interventions based on IEL. (Mead, 2009, p. 20).

In 2003, New Jersey mandated the IEL comprehensive reading model by promulgating regulations for "Improving Standards-driven Instruction and Literacy in Abbott Districts." N.J.A.C. 6A:10 A. (New Jersey Department of Education, 2004). In 2007, the Department of Education provided clarity on the IEL program by issuing "rules …to implement the Abbott v Burke decisions and … ensure that all students in poor urban districts receive educational entitlements guaranteed them by the New Jersey Constitution." N.J.A.C. 6A:10A-1.1 (2007). In 2007, the NJ Department of Education defined IEL as a "means program for children age three through grade three to ensure that all students read at grade level by the end of third grade. The core program includes curriculum and instruction that address the CCCS and the expectations, continuous assessment of students' need; an emphasis on small group instruction in designated

[60] The mediation agreement under Abbott X required New Jersey to intervene in 42 low performing schools where fewer than one half of fourth graders were reading on grade level.

learning centers; at least 90 minute uninterrupted literacy block for K to grade three; and a classroom library." N.J.A.C. 6A:10A-1.1 (2007).[61]

The IEL ingredients included classroom libraries, small learning centers, frequent assessments, uninterrupted time and "process writing."[62] The philosophy of IEL included adherence to five essentials of scientifically based reading research according to the US Department of Education including phonemic awareness, phonics, fluency, vocabulary, and comprehension. The NJ Department of Education added motivation and background knowledge, and emphasized Language Arts Literacy. The structure of IEL included a classroom library, a reading center and a writing center for preK-3rd grade and a technology center for K-3rd grade. The class size was not to exceed 21 in grade K=3rd and 15 in pre K. IEL also requires specific time to small group instruction during the reading block.[63]

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[61]In high needs districts where less that 85% of total students have achieved proficiency in language arts literacy on the NJ ASK 3 shall provide an intensive early literacy program for preschool to grade three to ensure that all students achieve proficiency. The IEL shall include the following components:

1. An emphasis on small group instruction in at least reading, writing and technology;
2. A comprehensive early assessment program;
3. At least a daily 90 minute uninterrupted language arts literary block in grades kindergarten through three with guidance in the use of that that may include the following instructional strategies:
   i. Use of a reading measure to differentiate student needs;
   ii. Small group instruction;
   iii. Direct instruction;
   iv. Guided reading; and
   v. Shared reading
4. instructional materials that include concepts and themes form other content areas;
5. Professional development opportunities for teachers that focus on the elements of intensive early literacy…
6. consistent and adequate opportunities for teachers to discuss and analyze student work, interim progress measures and assessment results…
7. A classroom library…
8. Use of a highly skilled literacy coach or certified teacher to coordinate professional development and collaboration…
9. Methods to involve parents and family members in student learning." N.J.A.C.:6A: 13-3.4 (2008).

[62] Ibid. at 9.

[63] The IEL curriculum included a comprehensive reading program consistent with the WSR developer and recommended adherence to the Reading First model. IEL required differentiated materials and multiple entry points for special populations and required native language and ESL reading according to state law. The IEL strategies included direct, small group, guided, shared and scientifically based reading research among other techniques. IEL

IEL also served as the vehicle to implement Reading First, a federal program that provided $100 million from 2002-2007 to employ research-based approaches to reading instruction in the early elementary grades. New Jersey used Reading First funds to implement IEL in 10 Abbott districts. (Mead, 2009, p. 20).

DOE found in introducing IEL to the Abbott districts and providing professional development, many districts were not teaching to the core standards. According to Gordon MacInnes, the Abbott Division Assistant Commissioner, "Little emphasis was given to standards based instruction by DOE or by the parties involved in Abbott."[64] MacInnes further stated "We have learned that the standards based educational movement had largely by-passed the Abbott districts." [65]

The IEL regulations called for an assessment of English language proficiency including annual testing in K-3rd grade. One of the main assessment tools was the NJ ASK test in 3rd grade.

Thus, the inquiry should turn to whether the specific policies mandated by the New Jersey Supreme Court are effective for economically disadvantaged students. The New Jersey Supreme Court permitted Abbott districts to utilize IEL in lieu of WSR and New Jersey promulgated regulations to implement IEL. One of the best methods to determine whether specific policies generated by Abbott are effective for economically disadvantaged students is to chart academic performance of students in districts that emphasize IEL.

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also called for professional development in scientifically based reading research and five components of reading, curriculum and mapping; approved strategies and assessment.

[64] Closing the Achievement Gap: Two Year Plan on Instructional Priorities, New Jersey Department of Education, p. 3, 2006

[65] Ibid at 15.

Gordon MacInnes characterized IEL in this manner: "Start early, connect preschool experiences to instruction from kindergarten through third grade, expand the time for literacy instruction, keep careful track of student progress, adjust instruction to reflect individual needs, surround students with books and words, focus on small groups for most instruction, spend extra time with struggling readers, and support teachers and engage them in making necessary changes." (MacInnes, 2009).

There are some limitations pertaining to the implementation of IEL. MacInnes further acknowledged that, "Since New Jersey's Intensive Early Literacy program is really a set of practices and habits built around classroom support and tailored help for struggling students, there is no ready formula of simple answer to the question of which districts are most fully implementing it." (MacInnes, 2009, p.80). IEL has been summarized as "a program to ensure that all students read at grade level by the end of grade" with a core curriculum that addresses the CCCS. Although the provision of a core curriculum can be readily evaluated across districts, the small group instruction can vary widely among the districts.

In Abbott X, the New Jersey Supreme Court directed twelve districts to work with NJDOE to improve instruction in 42 low-performing schools. Gordon MacInnes grouped these twelve districts by their priority in adopting early literacy as a priority, in cooperating with NJDOE, and in using the professional development opportunities offered by the department.

Five districts- Orange, Pleasantville, Elizabeth, Jersey City, and Union City are judged by commentators to be "high" implementers of IEL. "Jersey City focused on how to intensify small-group instruction and to give more time to the needs of struggling readers." (MacInnes 2009, p.84). "Five districts—Asbury Park, Bridgeton, East Orange, Irvington, and Newark— are

judged to be medium implementers…Three districts─Camden, Paterson, and Trenton─are characterized as "low" implementers. (MacInnes, 2009, p.85).

Traditionally, the IEL program has been evaluated by the percentage of students who are achieve proficient or advanced proficient results on the state standardized fourth grade language arts tests. One commentator states that "The Abbott districts that most enthusiastically embraced the IEL strategy–Elizabeth, Orange, and Union City, where it originated have made significant student learning gains and are narrowing–in some cases closing–the gap between the disadvantaged students they serve and statewide average in fourth grade reading achievement." (Mead, 2009, p.22).

Since Union City is the district that first implemented the IEL program it may be illuminating to review preliminary results. In 1999, only one-third of Union City's fourth-graders were proficient, a gap of 31 percentage points with students in non-Abbott districts.[66] The general problems were a lack of writing (which counts for half the score on the 3rd and 4th grade language arts tests) and over reliance on reading textbooks without providing supplemental reading opportunities. By 2008, 77.7 percent of Union City fourth-graders were proficient, the gap with non-Abbott districts closed to 8 percentage points. In 2008, Union City ranked 11th among the 31 Abbott districts.

At the middle school levels, the key recommendation of DOE was to focus on reading beyond textbooks and anthologies, with frequent writing and more time allotted to both (80 uninterrupted minutes versus typical class time period of 40-45 minutes). In 2005-06, the DOE Department of Urban Literacy focused on expanding the Literacy is Essential to Adolescent Development and Success (LEADS), which emphasized working across disciplines, using more

[66] New Jersey tested fourth-graders in literacy for the first time in 1999.

interesting and contemporary literature, frequent writing, diverse texts, and targeted interventions for students reading two or more years below grade level. In the few districts that have not instituted IEL across its schools, the Office of Urban Literacy committed to help teachers work in small groups, utilize guided reading, and evaluate writing. This approach has even greater import when considered in the context of the shifts toward the Common Core and the anticipated shifts to more sophisticated assessments of analytical and thinking skills.

2. Abbott Pre-school Program

As previously mentioned, New Jersey was the first state to require early education, starting at age three, for children "at risk" of entering kindergarten or primary school cognitively and socially behind their more economically advantaged peers. See infra at page 49 for a discussion of Abbott cases pertaining to pre-school programs. The Abbott decisions that focus on preschool include Abbott V, Abbott VI, Abbott VIII and Abbott XII. The Abbott preschool program has reached higher proportion of children-at-risk than any other state.

Chapter 3: DATA and METHODS

Introduction

The "lions share" of school finance research to date focuses on district wide academic performance after equity and adequacy court decisions were adjudicated by state supreme courts My study builds upon this district-analysis approach. I vastly expand the number of variables in play and evaluate the effects of Abbott v. Burke and the ensuing policy initiatives on Abbott districts, low socioeconomic non-Abbott districts, working class districts, and middle-class districts in particular. Subsequent to Abbott v. Burke in 1997, I am examining the effects on the academic achievement, graduation rates, teacher-pupil ratio, and learning environment of economically disadvantaged students. All thirty-one of the Abbott districts[67] are compared to 502 New Jersey districts in a comprehensive New Jersey data base[68] created for this study. Tukey's 1962 maxim that "it is better to have an approximate answer to the right question than an exact answer to the wrong question" applies to examining whether equity court decisions improve academic performance.

[67] The Abbott districts include Asbury Park, Bridgeton, Burlington, Camden, Orange, East Orange, Elizabeth, Garfield, Gloucester, Harrison, Hoboken, Irvington, Jersey City, Keansburg, Long Branch, Millville, Neptune, New Brunswick, Newark, Passaic, Paterson, Pemberton, Perth Amboy, Phillipsburg, Plainfield, Pleasantville, Salem, Trenton, Union, Vineland, and West New York (New Jersey Department of Education, 2005).

[68] The data base contains 533 districts after removing the regional service agencies, the county service agencies, and charter school districts wherein data was not available.

3.1 DATA

This study uses survey data from the Common Core of Data (CCD). The CCD is the primary National Center for Education Statistics (NCES) database on public elementary and secondary education in the United States. This study also uses the School District Finance Survey (F-33); the Local Education Agency Universe; and the School Universe.

The School District Finance Survey (F-33) provides finance data for all local education agencies (LEAs) that provide free public elementary and secondary (prekindergarten through grade 12) education in the United States (Cornman, et al 2020). The F-33 consists of data submitted annually to NCES by state education agencies (SEAs) in the 50 states and the District of Columbia.

The F-33 survey utilizes functions and objects, which are crucial to understand school finance variables in the context of analyzing the effects of an equity court decision on revenues and expenditures. A function describes the activity for which a service or material object is acquired. The expenditure functions include instruction, instructional staff support services, pupil support services, general administration, school administration, operations and maintenance, student transportation, other support services (such as business services), food services, and enterprise operations. An object is used to describe the service or commodity obtained as a result of a specific expenditure. Objects reported within a function include salaries, employee benefits, purchased services, supplies, and equipment. Expenditures per pupil, instruction expenditures per pupil, and student support expenditures per pupil for FY 1996-FY 2017 were collected from the F-33 survey.

The Local Education Agency (LEA) Universe Survey provides data including address and telephone number, location and type of agency, latitude and longitude of each district. Some

of the crucial variables collected at the district level include Membership, English Language Learners and the Number of students graduating. The teacher-pupil ratio for all New Jersey districts FY 1996-FY 2017 was gleaned from the LEA Universe. I cross-checked the graduation rates provided by the State of New Jersey against the graduation rates in the LEA Universe. The School Universe Survey provides data on all elementary and secondary schools. Some of the most crucial variables in the School Universe are Locale codes-urban, suburban, town, and rural areas, Schools receiving Title I Funding, Charter schools, number of students eligible for Reduced or Free lunch, and Ethnicity of students. The locale codes for all New Jersey districts were collected from the School Universe. Ethnicity data on a district basis for Abbott districts, low socioeconomic, working-class, and middle-class districts were compiled from the School Universe.

This study also utilizes longitudinal data on a district basis from the School Performance Reports, New Jersey Department of Education and the New Jersey Archives Data. The School Performance Reports provide parents, students and school communities with information about each school and district. The proficiency scores for standardized tests administered to students in 4^{th}, 8^{th}, and 11^{th} grades from Abbott districts, low-socioeconomic, working class, and middle class districts for FY 2003, FY 2004, and FY 2012-FY 2016 were compiled from the School Performance Reports. The proficiency scores for standardized tests in reading and math administered to students in 4^{th} and 8^{th} grades from Abbott districts, low-socioeconomic, working class, and middle-class districts for FY 1999-FY 2002 were obtained from the N.J Archives data. In a limitation that impacted this study, New Jersey tested fourth-graders in literacy for the first time in FY 1999 (School Year 1998-99). Proficiency rates on standardized tests in reading and math in 11^{th} grade from FY 95 through FY 2002 were obtained from the N.J. Archives data.

Graduating with the class data from the FY 1995 to FY 2002 school year were collected from the N.J. Archives data. SAT verbal and math district averages from FY 1995-FY 2002 were gathered from the N.J. Archives data. Finally, attendance rates in Abbott districts, analogous low socioeconomic districts, and working class districts were collected for FY 1995-FY 2002 from the N.J. Archives data.

The percentage of children in poverty by district for FY 95 through FY 2002 was obtained from the U.S. Census Bureau's Small Area Income and Poverty Estimates (SAIPE) data. The SAIPE program provides annual estimates of income and poverty statistics for all school districts, counties, and states. The main objective of this program is to "provide estimates of income and poverty for the administration of federal programs and the allocation of federal funds to local jurisdictions…. The estimates are not direct counts from enumerations or administrative records, nor direct estimates from sample surveys. Instead, for counties and states, [SAIPE] model[s] income and poverty estimates by combining survey data with population estimates and administrative records. For school districts, [SAIPE] use[s] the model-based county estimates and inputs from federal tax information and multi-year survey data to produce estimates of poverty." (See https://www.census.gov/programs-surveys/saipe/about.html)
The percentage of the population with bachelor's degree or higher was gathered from the American Community Survey (ACS) for FY 2012-15. The ACS is a nationwide survey designed to provide communities with reliable and timely social, economic, housing, and demographic data every year. The Census Bureau uses data collected in the ACS to provide estimates on a broad range of population, housing unit, and household characteristics for states, counties, cities, school districts, congressional districts, census tracts, block groups, and many other geographic areas.

https://www.census.gov/content/dam/Census/library/publications/2018/acs/acs_general_handbook_2018_ch01.pdf

3.2 MEASURES

3.3 OUTCOMES

1. Revenues and Expenditures since Abbott v. Burke (1997)

The outcomes include revenues per pupil; current expenditures per pupil; instruction expenditures per pupil; instruction and instruction-related expenditures per pupil; student support expenditures per pupil; general administration expenditures per pupil; and school administration expenditures per pupil. The denominator for these variables is membership,[69] which is a snapshot of total student enrollment on or about October 1st of the school year.

Current expenditures comprise expenditures for the day-to-day operation of schools and school districts for public elementary and secondary education, including expenditures for staff salaries and benefits, supplies, and purchased services (Cornman, Ampadu, Wheeler, Hanak, and Zhou, 2019 pg. B-4).[70] Current expenditures per pupil are available from the 1995-96 to 2017-18 school year. Current instruction expenditures include expenditures for activities related to the interaction between teachers and students, including salaries and benefits for teachers and teacher aides, textbooks, supplies, and purchased services. (Cornman, Ampadu, Wheeler, Hanak, and Zhou, 2019 pg. B-4).[71] Instruction and instruction-related expenditures are expenditures directly related to providing instruction and for activities that assist with classroom instruction.

[69] Membership comprises the total student enrollment on October 1 (or the closest school day to October 1) for all grade levels (including prekindergarten and kindergarten) and ungraded pupils. Membership includes students both present and absent on the measurement day. Fall Membership (V33) is the count of students the reporting LEA is financially responsible for. Cornman, et al (2020) pg. 20.

[70] General administration expenditures and school administration expenditures are also included in current expenditures. Expenditures associated with repaying debts and capital outlays (e.g., purchases of land, school construction, and equipment) are excluded from current expenditures. Programs outside the scope of public prekindergarten through grade 12 education, such as community services and adult education are not included in current expenditures. Payments to private schools and payments to charter schools outside of the school district are also excluded from current expenditures.

[71] These expenditures also include expenditures relating to extracurricular and co-curricular activities.

(Cornman, Ampadu, Wheeler, Hanak, and Zhou, 2019 pg. B-4).[72] Expenditures on instruction and expenditures for instructional staff are available from the 1995-96 to 2017-18 school year. Expenditures for student support services includes attendance and social work, guidance, health, psychological services, speech pathology, audiology, and other student support services. Expenditures for general administration include expenditures for board of education and executive administration (office of the superintendent) services (Cornman, S.Q., Ampadu, O., Hanak, K.S. 2020). Expenditures for school administration encompass expenditures for the office of the principal services. (Cornman, S.Q., Ampadu, O., Hanak, K.S. 2020).

The State fiscal coordinators who provide data to the School District Finance Survey (F-33) follow the F-33 data variable definitions for expenditures by function very carefully.[73] For example, one of the primary reasons that State fiscal coordinators closely adhere to the instruction expenditures data definition is that it comprises the lions' share of current expenditures. Furthermore, the annual NCES workshop for State fiscal coordinators focuses in part on the definitions of expenditure variables.

2. Student Performance

For student performance the proficiency levels on standardized test scores for reading and math in fourth, eighth, and eleventh grade; reading and math SAT scores; and graduation rates are utilized.

[72] Instruction and instruction related expenditures are more expansive than instruction expenditures in that all instruction related expenditures are accounted for, including salaries and benefits for teachers, teaching assistants, librarians and library aides, in-service teacher trainers, curriculum development, student assessment, technology (for students but outside the classroom), supplies, and purchased services related to these activities.

[73] School district finance expenditure functions include instruction, instructional staff support services, pupil support services, general administration, school administration, operations and maintenance, student transportation, other support services (such as business services), food services, and enterprise operations. (Cornman, et al. 2020)

The outcomes of fourth and eighth grade proficiency on State administered standardized tests are available one year prior to the intervention of Abbott v. Burke and for three years subsequent to the treatment. (NJ tested fourth-grade students in literacy for the first time in school year 1998-99).[74] Proficiency rates on standardized tests in reading and math in eleventh grade are available from the 1994-95 through the 2001-02 school year.[75]

SAT verbal and math district-level averages are available from the 1994-95 through 2001-02 school year. Graduation Rates by district for Abbott districts, low-socioeconomic, working-class, and middle-class districts are used. Graduating with the class data are available from the 1994-95 through 2001-02 school year.

3. Learning Environment

For learning environment, the teacher pupil ratio, elementary class size, attendance, and discipline (suspensions) are utilized. The teacher pupil ratio is calculated by dividing the number of certified teachers by membership. The student-faculty ratio, class size, attendance data are available from the 1994-95 through 2017-18 school year. Class size is reported by districts in the NJ Archives data base for the school year 1998-99 to 2001-02. Attendance rates on a percentage basis is reported for school year 1994-95 to 2000-01 in the NJ Archives data base. Discipline (suspensions) is reported on the Civil Rights Data Collection (CRDC). The elementary suspensions are from the 1995-96 through the 2017-18 school year.

[74] The DD model is applied in particular to 4th and 8th grade proficiency levels because the CITS model requires data for at least four points prior to the intervention.

[75] Since the data for proficiency in 11th grade reading and math, graduating with the class, and SAT verbal and math district scores are available before Abbott v. Burke, the linear trends can capture the pre-trends starting from 1994 for these educational outcomes. Controlling for the pre-trends is critical to estimate the true impact of Abbott v. Burke in the sense that pre-existing diverging or converging gaps can be taken into account.

4. Post-High School Graduation Plans

The outcomes on post-secondary plans include graduates attending four-year colleges, graduates attending two-year college, graduates entering the military, graduate entering the workforce, employment and graduates entering other post-secondary schools. The data is available from the 1994-95 through 2001-02 school year.

3.4 COVARIATES

The control variables include the child poverty rate; a dummy variable for high minority districts; urbanicity; percent of population with bachelor's degree or higher.

The child poverty rate is the percentage of families whose income in past 12 months is below poverty level in each district. The child poverty rate is a continuous variable. The child poverty rate data is drawn from the SAIPE data.

High minority districts that have in excess of 60% minority students are marked as "1" for the dummy variable.[76] Districts with 40% or less minority students are marked as "0" for the dummy variable.

The urbanicity variables include four separate dummy variables for city, rural, town, and suburbs, urban centric locale codes that are drawn the LEA Universe survey. The city, rural, and town dummy variables are compared against suburbs dummy variable.

[76] The term "minority" encompasses students who are Black, Hispanic, Asian/Pacific Islander, American Indian, or Two or more races.

3.5 ANALYTIC APPROACH

My study proceeds from descriptive analyses of revenues by source and expenditures per pupil by function to quasi-experimental models. My primary causal analyses involved applying a difference-in-differences (DD) approach using expenditures per pupil, student teacher ratio, state standardized assessment scores for fourth, eighth, and eleventh grade; SAT Verbal and Math district averages; and Graduating with the Class as outcomes. The DD estimation is a quasi-experimental design that makes use of longitudinal data from treatment and control groups to obtain an appropriate counterfactual to estimate a causal effect. My secondary causal analyses entailed a comparative interrupted time series (CITS) approach using state standardized assessment scores for eleventh grades, SAT scores, graduation rates, and post high plans as outcomes.

I separated the N.J. districts into six categories ranging from the lowest to the highest socioeconomic status according to the District Factor Group (DFG) classification scheme established by the Department of Education:[77]

Expenditures per pupil since Abbott v. Burke (1997) compared to the following categories of districts:

1. Abbott districts-31

2. Low socioeconomic districts (A and B "DFG" group) that are not Abbott districts (68 districts)

3. Working class districts (C and D "DFG" group) (59 districts)

4. Middle class districts (D and E "DFG" group) (62 districts)

[77] The DFG factor groups were first created in 1975 and were recalculated with the information gathered by the 2000 census. Subsequent to the Abbott IV ruling, the DFGs were also used to define the group of school districts in which the Abbott v. Burke parity remedy would be based (New Jersey Department of Education, 2007).

5. Upper middle-class districts (F, G and H "DFG" group) (144 districts)

6. Highest socioeconomic districts (I and J "DFG" group) (113 districts)

Following the Abbott v. Burke decision in 1997 and ensuing policy initiatives, I compared revenues and expenditures for the thirty-one (31) Abbott districts against the balance of 502 districts in N.J. Expenditures per pupil in Abbott districts, low socioeconomic and working-class districts are analyzed prior and subsequent to the 1997 Abbott v. Burke decision and the enactment of SFRA. Similarly, expenditures per pupil in middle-class districts[78] and upper middle-class districts are also subject to this analysis.

Expenditures per pupil the highest socio-economic districts are compared with Abbott districts prior and subsequent to the 1997 Abbott v. Burke decision and the enactment of SFRA. This is the most crucial comparison as the NJ Supreme Court held in Abbott IV that Abbott districts must receive the same funding per pupil as students in the two highest socio-economic district factor groups in the State.

The outcomes of instruction and instruction related expenditures[79] per pupil as well as student support services per pupil prior and subsequent to the Abbott 1997 decision are analyzed in Abbott districts against five subsets of districts based on socioeconomic factors. Furthermore, general administration and school administration expenditures per pupil are subjected to the same analysis.

[78] The middle-class districts include Manalapan-Englishtown, Cherry Hill, Edison, Piscataway, Middleton, Green Brook, High Bridge, East Windsor, Fairlawn, Cedar Grove, Springfield, Paramus, Parsippany-Troy Hills, West Orange, Morris. Lawrenceville, and Middletown.

[79] Specifically, Current Expenditures for Instruction (TCURINST) plus Instructional Staff Support (E-07) expenditures are analyzed. The Current Expenditures for Instruction (TCURINST) are clearly defined in the F-33 survey instructions. The Current Expenditures for Instruction definition has been stable over time as the direct result of consistent instruction functions set forth in the NCES Accounting Handbook and the annual training of State fiscal coordinators by NCES staff.

In order to estimate the heterogeneous treatment effect of Abbott v. Burke (1997) on expenditures per pupil, student performance, and learning culture in Abbott districts subsequent to the court decision, I use the difference in differences (DD) model as my main model. I apply the DD estimation as Downes and Zabel did in Massachusetts, wherein they demonstrated that MERA played a role in equalizing education spending and keeping constant the previously diverging achievement gap between the poor and rich districts. (Downes and Zabel 2009).

"The *differences in differences* (DD) method recognizes in the absence of random assignment, treatment and control groups are likely to differ for many reasons. Sometimes, however, treatment and control outcomes move in parallel in the absence of treatment. When they do, the divergence of a post treatment path from the trend established by a comparison group may signal a treatment effect." (Angrist and Pischke, 2015, p. 178). I am examining whether expenditures per pupil; standardized assessment scores for fourth, eighth, and eleventh grades; SAT Verbal and Math scores; graduating with the class; and student teacher ratio in the treatment group of Abbott districts diverged from the trend of the control groups of low socioeconomic districts and working class districts following Abbott v. Burke (1997). Specifically, I am examining whether the Abbott districts make greater subsequent gains on proficiency of standardized test scores for fourth, eighth, and eleventh grades; SAT scores; and graduating with the class than low socioeconomic districts and working-class districts. (See Somers, Zhu, Jacob, and Bloom 2013, p. 27).[80]

[80]"The differences in differences (DD) model evaluates the impact of a program by looking at whether ─ relative to the pre-intervention period ─ the treatment group makes greater subsequent gains than does the comparison group on the outcome of interest." (Somers, Zhu, Jacob, and Bloom 2013, p. 27).

I also use the DD model to estimate the treatment effect of Abbott IV on post high-school plans, including attending two-year college; four-year college, other post-secondary education, joining the military, or entering full-time employment.

Finally, I use the DD model to estimate the treatment effect of the intensive early literacy (IEL) program on student performance in ten districts that were "high or medium implementers" of IEL in response to Abbott v. Burke (1997). The "high and medium implementers" of IEL were engaged in the IEL program long before 2003, when New Jersey mandated the IEL comprehensive reading model by promulgating regulations for "Improving Standards-driven Instruction and Literacy in Abbott Districts." N.J.A.C. 6A:10 A. (New Jersey Department of Education, 2004).

The primary assumption for the difference-in-difference model is that the trends in enrollment for the two groups being compared were parallel prior to the change (Wooldridge, 2010).[81] The counterfactual tells us what would have happened in Abbott districts had everything evolved as it did in low socioeconomic districts. In the Abbott v. Burke context, DD presumes that absent any policy differences, the trend of education spending, student performance, and learning culture in low socioeconomic districts is what we should have expected to see in Abbott districts.

Below I set forth the DD methodology as applied to Abbott v. Burke (1997), including a discussion of the estimator equation, my identification strategy, the challenges of the estimation strategies, and methods to surmount those challenges.

The following is the equation for the basic DD analysis:[82]

[81] "The DD counterfactual comes from a strong but easily stated assumption: common trends." (Wooldridge, 2010).
[82] The simple DD estimator equation is
$Y = \alpha + \beta PostXTreat + \lambda Post + \gamma Treat + \mu$

$$Y_{st} = \alpha + \delta_{rDD} treatXpost_{st} + \beta_k treat_{ks} + \Upsilon_j post_{jt} + \varepsilon_{st}$$

I am applying this estimator equation to Abbott districts in New Jersey as follows:

$$Y_{st} = \alpha + \delta_{rDD} * \underline{Abbott\ v.\ BurkeX}Post + \beta_k treat_{ks} + \Upsilon_j post_{jt} + \varepsilon_{st}$$

In this equation, α is the constant. The Treat (*Abbott v. Burke*) variable is a dummy variable that is turned on for just districts that are subject to Abbott v. Burke. γ is the treatment group effect (accounts for time invariant differences between treatment and comparison groups).

The Post (α_c) variable is a dummy variable turned on for one year after Abbott v. Burke funding changes are in place. Abbott v. Burke was decided on May 14, 1997, which is at the conclusion of FY 1997. State aid to Abbott districts began to substantially increase in FY 1998 (school year 1997-98).[83] The Abbott districts needed one year to ramp up their instructional and support programs in FY 98, which is why I assume the policy intervention occurred in FY 99 (1998-99 school year). Thus, the Post variable is a dummy variable for FY 2000, which is one year after Abbott v. Burke funding changes are in place. Λ is the post time effect (common time trend for treatment and comparison groups).

The interaction of these variables PostXTreat is therefore also a dummy variable equal to one when a district is subject to Abbott v. Burke. Its coefficient, β represents the DD causal effect of Abbott v. Burke on various dependent variables for Abbott districts subsequent to the court decision. The interaction term PostXTreat, indicates observations of Abbott districts in the post-treatment period.

[83] Commencing in FY 1998, State aid to Abbott districts increased dramatically, from approximately $1.96 billion to approximately $4 billion between FY 97 and FY 2005.

In this equation, Y is outcomes which consist of three components: education spending, student performance, and enhancements to the learning culture. The error term is μ (ε).

I include district fixed effects and year fixed effects in my model. District fixed effects, or adding a dummy variable for each district, account for characteristics of a district that do not change over time but might bias the results due to correlation with the independent variables. The fixed effects capture district invariant traits not otherwise captured within the model. Year fixed effects control for aggregate trends that occur over time. The year fixed effects are always present to capture time invariant. Although adding fixed effects uses up degrees of freedom, fixed effects allows for more consistent estimation.

I also utilize a fixed effects DD estimator.

$$Y_{ist} = \alpha + \beta D_{st} + \gamma_s + \lambda_t + \mu_{ist}$$

The treatment group for the main DD estimation comprises the 31 Abbott districts. The three comparison groups that did not receive Abbott funding include:

(1) low socioeconomic non-Abbott districts (68 districts from DFG "A/B" groups);

(2) working class districts (59 districts from DFG "C/D" groups); and

(3) middle class districts (62 districts from DFG "D/E" groups).

The treatment group for the DD model to estimate the effects of IEL is comprised of students from the 10 Abbott districts that were "high or medium implementers" of IEL in terms of adopting early literacy as a priority, cooperating with NJDOE, and in using the professional development opportunities offered by the department. As previously mentioned, the "high implementers" of IEL included Orange, Pleasantville, Elizabeth, Jersey City, and Union City. Furthermore, the "medium implementers" of IEL included Asbury Park, Bridgeton, East Orange,

Irvington, and Newark. The comparison group that did not receive Abbott funding includes low socioeconomic non-Abbott districts (69 districts from DFG "A/B" groups). The second treatment group for the DD model is comprised of students from the 21 Abbott districts that were "low implementers of IEL. The DD model to estimate the effects of IEL uses the outcomes of 4th and 8th grade standardized test scores.

As previously mentioned, New Jersey utilizes District Factor Groups (DFGs), which represent an approximate measure of a community's relative socio-economic status (New Jersey Department of Education, 2005). First, New Jersey calculates the SES score (socio-economic statistic) for each student, then they calculate the weighted amount for each student using 6 indicators about their origin and then concentrates on how many students with these SES weighted scores are in each district. The DFGs were calculated using the following six variables that are closely related to SES:

1. Percent of adults with no high school diploma
2. Percent of adults with some college education
3. occupational status
4. unemployment rate
5. percent of individuals in poverty
6. median family income

Although I did not create matched comparison groups according to the methodology utilized by experts such as Howard Bloom,[84] the treatment group of Abbott districts is substantially similar to 69 low socioeconomic districts in the DFG groups A and B. In applying

[84] According to Howard Bloom, there are three types of decisions for the creation of matched comparison groups: the pool of candidates from which the comparison group is to be selected (comparison pool); the set of characteristics on which to match schools (matching characteristics); and statistical method used to select comparison schools (matching method).

the factors of percentage of children in poverty and median family income, the districts in the treatment group are directly analogous to the low socioeconomic districts.

In selecting a comparison group, I did not utilize all available nontreatment schools. I selected a subset of districts that are similar to the Abbott districts on district-level characteristics.

Twenty (20) of the thirty-one (31) Abbott districts fall within DFG group A. Nine (9) of the Abbott districts fall within DFG group B. One (1) Abbott district, Neptune Township is in DFG group CD. One Abbott district, Hoboken falls in DFG group FG-which is middle class on the verge of upper middle class.

Sixteen (16) non-Abbott districts fall in DFG group A, including Perth Amboy, Atlantic City, Dover, Penns Grove-Carney's Point, and Wildwood City. These 16 non-Abbott districts have a high number of economically disadvantaged students as approximately 80 percent of students in the DFG group A are classified as economically disadvantaged. Thus, the 16 non-Abbott districts in DFG group A are very similar to Abbott districts based on the percentage of children in poverty and median family income factors.

The districts in the DFG group B also have a significant number of socio-economically disadvantaged students.[85] Aside from the 16 districts non-Abbott districts that fall in DFG group A, the balance of non-Abbott districts in control group of low socioeconomic districts fall in DFG group B. As the chart below indicates, approximately 56 percent of students in the DFG group B are classified as economically disadvantaged by the New Jersey DOE.

[85] The districts from DFG group B include North Bergen, Plainfield, Linden, Long Branch, Kearney, Carteret, Lodi, Roselle, Cliffside Park, and Harrison.

Table 3-1. Total Number of Students in District Factor Groups A and B; 2006

District Factor Group	Total Students	Econ Disad students	% Econ Disad	Advantaged students	% Advantaged stud
A	18,469	14,773	79.99%	3,696	20.01%
B	10,715	5,993	55.93%	4,722	44.07%

(Source: New Jersey Department of Education website (2006)

The optimal radius points to the 69 low socioeconomic districts as the best comparison group because 29 of the 31 Abbott districts are in the DFG groups A and B.

I have categorized districts in DFG groups C and D as the working-class comparison group. The primary reason for designating these districts as working-class is that there a significant amount of economically disadvantaged students in these districts.

The third comparison group in comprised of districts in DFG groups D and F, which have been categorized as middle-class.

An important threat to the assumption that in the absence of the intervention, the treatment group would have made the same average gains as comparison group is that treatment and comparison schools may have different "maturation rates." For example, in an analysis of the Reading First, Somers and her colleagues point out that "The larger gains made by Reading First Schools could actually be due to a preexisting difference in the growth rates of treatment and comparison schools (as opposed to the impact of Reading First). Unfortunately, with less than four years of pretest data, it is almost impossible to determine the extent to which differential growth rates are a threat to casual validity." (Somers, Zhu, Jacob, and Bloom 2013, p. 29).

In a limitation that must be acknowledged for my study, proficiency scores for reading and math in 4th and 8th grades are only available for one year prior to the intervention, which is school year 1997-98. The intervention occurred in school year 1998-99. The reason is that New Jersey did not commence standardized testing for reading and math in fourth and eighth grades

until the 1998-99 school year. This limitation to analyzing student performance was recognized by the New Jersey Supreme Court in the Abbott v. Burke decision adjudicated in 1997. Abbott v. Burke, 149 N.J. 145 (1997), discussed infra at p. 60. Under these circumstances, the DD model must be utilized for those data, although it may not be optimum solution to apply to the outcome of student performance.

If baseline data is available for four years prior to the intervention, the Comparative Interrupted Time Series (CITS) estimation may be utilized.[86] "In CITS the impact of a program is evaluated by looking at whether─once the program begins─the treatment group deviates from its pre-intervention ***trend*** by a greater amount than does the comparison group. If so, the program is considered to be effective."[87] (Somers, Zhu, Jacob, and Bloom 2013, p. 29).

The CITS approach has been recently described by one researcher as "a generalized version of what the econometrics literature refers to as a differences-in-differences design, in which both the pretreatment outcomes of the treated group and the change in outcomes in the comparison group contribute to estimating the counterfactual outcome for the treatment group." (Hallberg, Williams, Swanlund, and Eno 2018, p. 297). "The CITS design requires proper model specification and selection of a comparison group that (1) does not differ from the treatment group in ways that vary over time that are related to the outcome of interest and (2) is exposed to the same history or instrumentation threats as the treatment group. Ibid.

[86] The CITS design has more stringent requirements than the DD. The CITS design requires pretest data for at least four points before the intervention begins. Somers and her colleagues point out that "With at least four years of baseline data, the validity of short-term impacts is strongest, because one can explicitly choose a comparison group with similar pre-intervention trends or statistically control for existing differences in baseline trends." Kelly Hallberg and her colleagues reiterate this point, stating that "We recommend at least three preintervention and one postintervention measure of the outcome." (Hallberg, Williams, Swanlund, and Eno 2018, p. 302).

[87] "The DD design is a simplification of the CITS design—it evaluates the impact of a program by looking at whether the treatment group deviates from its baseline mean by a great amount than the comparison group." (Somers 2013).

Howard Bloom outlined three main modeling approaches for CITS: the baseline mean model, the linear baseline trend model, and the nonlinear baseline trend model (Bloom 2003).[88] Kelly Hallberg points out that the baseline mean model closely resembles the differences in differences approach. Hallberg states that "This modeling approach assumes the differences between treatment and comparison cases are fixed (i.e. that in the absence of treatment the distances between the treatment group slop and the comparison group slope would be constant across preintervention and posttreatment periods." (Hallberg, Williams, Swanlund, and Eno 2018, p. 299).[89]

To obtain causal estimates of the impact of Abbott v. Burke (1997) on standardized assessment scores for eleventh grades, SAT scores, graduation rates, and post-high school plans, I also use a CITS approach, specifically the baseline mean model. (Ready 2016; Somers, Zhu, Jacob, and Bloom 2013). In my study, the outcomes of eleventh grade standardized test scores, average district SAT scores, graduating with the class, attendance, discipline (suspensions), and post-high school plans including college, other school, employment, joining the military are available for New Jersey districts back to school year 1994-95. Thus, there are four data points available prior to when the intervention occurs in school year 1998-99. The outcomes of student-faculty ratio, elementary class size, and expenditures per pupil are also available back to school year 1994-95.

Finally, the CITS design does include some limitations. In the CITS design, the comparison group's deviation from the baseline trend provides an estimate of the mean

[88] Kelly Hallberg indicates that another approach that is commonly used is the year and school fixed effects model (Hallberg, et al 2018 p. 299).

[89] Hallberg further indicates that "The difference between the average preintervention and post intervention performance in the treatment schools, less this same difference in the comparison schools, serves as the estimate of treatment effects." (Hallberg, Williams, Swanlund, and Eno 2018, p. 299).

counterfactual outcome for the treatment group. The potential threat to this assumption is that the treatment and comparison group are not subject to the same policy events occurring at the same time as the intervention being evaluation, such as another school reform initiative or massive staff turnover.

Furthermore, it is important to note exactly what effect is being estimated (i.e. the estimand). For example, in an application of the CITS model to school-level performance, Hallberg and her colleagues point out that "School-level CITS estimates the differences in school performance under treatment and comparison conditions by comparing cohorts of students that attend treatment and comparison schools over time. It does not provide an estimate of what would have happened to individual students or groups of students under the two treatment conditions." (Hallberg, Williams, Swanlund, and Eno 208, p. 297). They indicate that "School-level CITS estimates do not account for changes in the composition of students in schools over time, sometimes referred to as 'stayers, leavers, and joiners' in the RCT literature." Ibid. In the case of applying the CITS model to the intervention of Abbott v. Burke (1997), these estimates do not account for changes in the composition of students in Abbott districts over time.

Chapter 4: RESULTS for RESOURCES from ABBOTT v. BURKE and FUNDS REACHING STUDENTS

1. Abbott v. Burke increased funding for economically disadvantaged children in Abbott districts

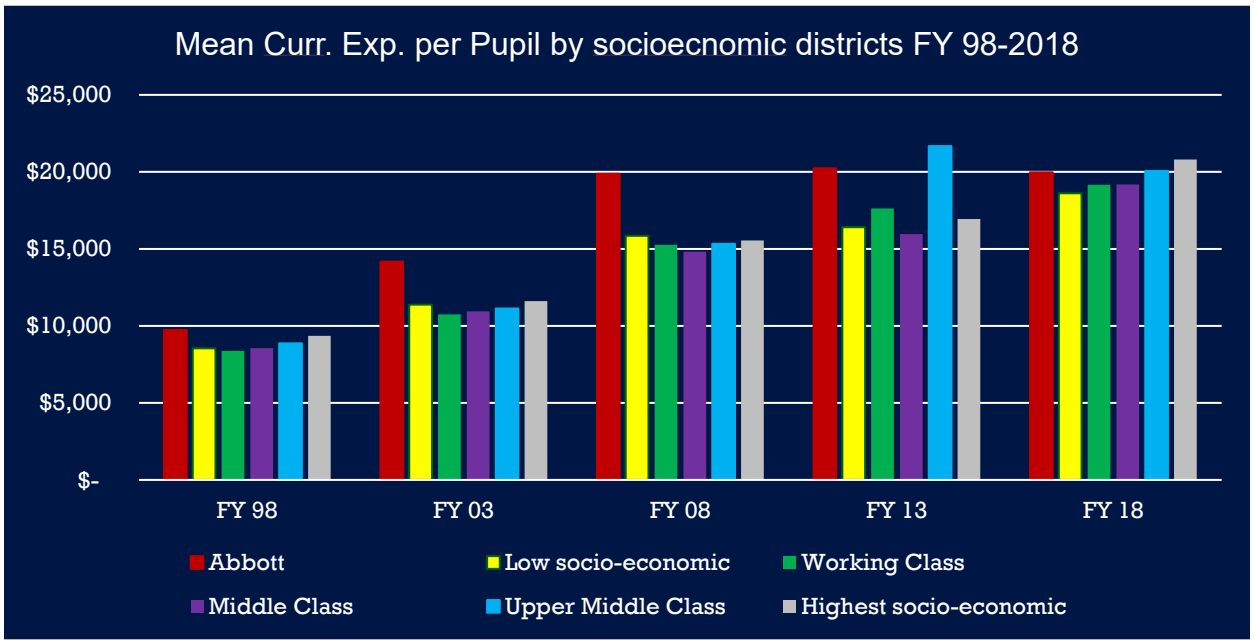
My first hypothesis that "The leading case of Abbott v. Burke and subsequent reform policies increased funding for economically disadvantaged children in Abbott districts" is based on the landmark Abbott decision, holding that twenty-eight (28) "special needs" districts must receive the same funding per pupil as students in the two highest socio-economic district factor groups in the State. The descriptive analysis of current expenditures per pupil on a longitudinal basis in Abbott districts as compared to other socioeconomic districts is set forth.

My second hypothesis that "Increased resources from Abbott v. Burke directly reach students in the classroom through instruction and student support services" is based on concept that current expenditures per pupil are primarily based on instruction expenditures including salaries and benefits, as well as support services. This hypothesis necessitates an inquiry into how the increased funds are being utilized and requires familiarity with expenditure functions.[90] Mean current expenditures per pupil in the Abbott districts exceeded the expenditures per pupil in the highest socio-economic districts for a 20-year time period, from FY 96 through FY 2016. In FY 96 there was a 1.2 percentage difference between mean current expenditures per pupil in the Abbott districts ($9,324) and the highest socio-economic districts in the state ($9,214). Consistent with the holding of Abbott v. Burke that the Abbott districts receive resources equal to that of the highest socioeconomic districts, by FY 2014 the percentage difference in mean

[90] School district finance expenditure functions include instruction, instructional staff support services, pupil support services, general administration, school administration, operations and maintenance, student transportation, other upport services (such as business services), food services, and enterprise operations. (Cornman 2020)

expenditures per pupil had grown to 13.8 percent between the Abbott districts ($20,278) and the highest socio economic districts ($17,470). Since FY 2014, the percentage difference in mean expenditures per pupil between Abbott districts and the highest socioeconomic districts began to level off at 10.7 percent in FY 2015, and 6.6 percent in FY 2016. In FY 2017, for the first time in 20 years the percentage difference in mean expenditures per pupil between Abbott districts ($19,554) and the highest socioeconomic districts ($19,992) was slightly negative at -2.0 percent. By 2018, the percentage difference in mean expenditures per pupil between Abbott districts ($19,554) and the highest socioeconomic districts ($20,801) remained slightly negative at 4.1 percent.

Figure 4-1. Mean Current Expenditures per Pupil by socioeconomic districts FY 98-FY 2018



SOURCE: Author's calculations are based on School District Finance Survey (F-33); FY96, FY97, FY03, FY 08, FY13, FY18 Common Core of Data, NCES.

Note: The ramp-up year prior to treatment occurred in school year 1997-98. The treatment occurred in school year 1998-99. The post, or one year after treatment occurred in 1999-2000.

It is fascinating to note that the gap in current expenditures per pupil between low socioeconomic, working, and middle-class districts and Abbott districts initially expanded after Abbott v. Burke (1997), but substantially diminished in recent years. In FY 96, the percentage difference between mean current expenditures per pupil in the Abbott districts and low socioeconomic, working-class, and middle-class districts exceeded 11 percent. In the ramp-up year of FY 98, current expenditures per pupil remained relatively level with FY96, ranging from $8,383 in working-class districts, to $8,544 in low socioeconomic districts, $8,555 in middle class districts, to $9,740 in Abbott districts. Five years after the ramp-up year in FY 2003 current expenditures per pupil jumped by approximately $2,500 in low socioeconomic, working, and middle-class districts. In contrast, current expenditures per pupil increased by approximately $4,400 to $14,170 in Abbott districts. By FY 2008, current expenditures per pupil in the comparison districts increased on average by approximately $4,300 in low socioeconomic, working, and middle-class districts. In another striking difference, the Abbott districts increased by about $5,700 to $19,877 per pupil.

Table 4-1. Mean Expenditures Per Pupil by Socio-Economic Districts Selected Years 1996-2018

District	No.	1996	1998	2003	2008	2013	2018
Abbott	31	$9,324	$9,740	$14,170	$19,877	$20,231	$19,976
Low socio-economic	68	8,125	8,544	11,382	15,844	16,411	18,610
Working Class	58	8,283	8,383	10,745	15,262	17,629	19,160
Middle Class	74	8,274	8,555	10,940	14,821	15,967	19,185
Upper Middle Class	145	8,765	8,862	11,134	15,331	21,678	20,050
Highest socio-economic	114	9,214	9,350	11,609	15,544	16,943	20,801
Total	490						

SOURCE: School District Finance Survey (F-33) FY96, FY 98, FY03, FY08, FY13, FY18 Common Core of Data, NCES.
Note: FY 96 (School year 1995-96) was selected for this table because that is one year prior to Abbott v Burke (1997) (Abbott IV).

Five years later in FY 2013, expenditures per pupil increased by approximately $1,300 in low socioeconomic, working, and middle-class districts. However, expenditures per pupil in Abbott districts only increased by about $350, to $20,231. Notwithstanding this small increase, the Abbott districts were still expending between approximately $2,600-$4,300 more per pupil than the low socioeconomic, working class, and middle-class districts. For example, in FY 2013 mean current expenditures per pupil in Abbott districts were an astounding 21.1 percent higher than in middle class districts. Mean expenditures per pupil in Abbott districts were also 18.9 percent higher than in low socioeconomic districts; and 12.9 percent higher than working class districts respectively.

Table 4-2 Current Expenditures per Pupil FY 2013-FY 2018 in Abbott Districts and other Socioeconomic Districts

District	No.	2013	2014	2015	2016	2017	2018
Abbott	31	$ 20,231	$ 20,278	$ 20,413	$ 19,284	$ 19,524	$ 19,976
Low socio-economic	68	16,411	16,820	17,243	16,455	17,983	18,610
Working Class	58	17,629	16,659	17,026	17,208	18,032	19,160
Middle Class	74	15,967	16,550	17,026	17,658	18,299	19,185
Upper Middle Class	145	21,678	17,259	17,823	18,205	19,054	20,050
Highest socio-economic dist.	114	16,943	17,470	18,236	18,009	19,922	20,801
Total	490						

In a startling development, between FY 2013 and FY 2018, low socioeconomic, working, and middle-class districts effectively closed the spending gap with Abbott districts. On average current expenditures per pupil increased by approximately $1,400 in these districts and decreased by about $700 in Abbott districts between FY 2013 and FY 2017. By FY 2018, current expenditures per pupil in Abbott districts in the amount of $19, 976 only slightly exceeded low socioeconomic ($18,610) districts; working-class districts ($19, 160) and middle-class districts ($19,185). Thus, between FY 2013 and FY 2018, the gap in current expenditures per pupil

between Abbott districts and low socioeconomic districts decreased from 18.9 to 7.3 percent; decreased between Abbott districts and working-class districts from 12.9 to 4.1 percent; and decreased between Abbott districts and middle class districts from 21.1 percent to 4.0 percent.

Table 4-3 Percentage Difference Between Mean Expenditures per Pupil FY2013-FY2018 in Abbott Districts and Various Socioeconomic Districts

District categories	2013	2014	2015	2016	2017	2018
Abbotts & Highest socio-economic Districts	16.3	13.8	10.7	6.6	-2.0	-4.1
Abbotts & Upper Middle Class	-7.2	14.9	12.7	5.6	2.4	-0.4
Abbotts & Middle Class	21.1	18.4	16.6	8.4	6.3	4.0
Abbotts & Working Class	12.9	17.8	16.6	10.8	7.6	4.1
Abbotts & low socio-economic	18.9	17.1	15.5	14.7	7.9	7.3

SOURCE: School District Finance Survey (F-33) FY13-FY 18 Common Core of Data, NCES.

There are several possible explanations for the higher percentage increases in current expenditures per pupil in low socioeconomic, working, and middle-class districts as compared to Abbott districts. First, the New Jersey Supreme Court decision in 2009 that the funding scheme of SFRA based on the socioeconomic needs of each individual student, rather than geography, satisfied the requirements of the thorough and efficient clause of the New Jersey constitution, increased State funding for all economically disadvantaged students across those sub-set of districts, commencing in 2009. Abbott v. Burke, 199 N.J. 140 (2009) (Abbott XX). The fact that the legislature was mandated to fully fund 31 urban Abbott districts and 200 districts under the "adequacy" level pursuant to SFRA set forth a practice and procedure to provide additional State funding for students in low socioeconomic and working class districts in particular. (emphasis added). Second, by the time the New Jersey Supreme Court modified the Abbott XX decision in May, 2011, by ordering New Jersey to provide $500 million more to only the urban Abbott

districts in the 2011-12 school year, the State had already been providing funds for economically disadvantaged students regardless of their geography for three years. Abbott v. Burke, 206 N.J. 332 (2011).

It is unequivocal that the Abbott v. Burke decision in 1997 increased resources for students in Abbott districts equivalent to the same funding per pupil as students in the two highest socio-economic district factor groups in the State, particularly between FY 96 and FY 2008. However, the overall mean current expenditures per pupil for Abbott districts leveled off between FY 08 through FY 15, and slightly decreased in FY 16 and FY 17. Since the Abbott v. Burke (Abbott IV) decision in 1997, New Jersey has also successfully bridged the gap in spending between high-poverty and low-poverty districts. In FY 17 there was a 2.4 percent difference between total current expenditures in high-poverty districts and low-poverty districts in New Jersey, based on quartiles calculated by ranking LEAs by poverty rate[91] weighted by the number of children in poverty.
https://nces.ed.gov/ccd/tables/FY17_F33_CEPP_povertyquartile_table_092320.asp

In the high-poverty districts, the current expenditures per pupil were $18,831, as opposed to $18,380 in the low poverty districts. Ibid. In contrast, on a national basis, there was a -3.2 percent difference in FY 17 between current expenditures in high-poverty districts and low-poverty districts.

In FY 18, in New Jersey the percentage difference between current expenditures per pupil in high poverty districts and low poverty districts slightly decreased from FY 17. In FY 18, there was a 0.2 percent difference between total current expenditures in high-poverty districts and low-poverty districts in New Jersey (Cornman and Zhou 2021, not released yet). Current

[91] The poverty rate is the percentage of children ages 5–17 in families living below the poverty level.

expenditures per pupil were $19,129 in high-poverty districts, as opposed to $18,865 in low poverty districts. Ibid. In FY 18, on a national basis the difference between current expenditures in high-poverty districts and low-poverty districts was -2.9 percent.

New Jersey has also reduced the disparity between high-spending and low-spending districts. The coefficient of variation (CV) of current expenditures per pupil compares the average difference in per-pupil expenditures among LEAs in a State to the State's average per-pupil expenditure.[92] A low CV means there is less disparity in expenditures per pupil among LEAs within the State. In FY 18, the CV for New Jersey is 0.14. The state CVs ranged from a minimum of 0.07 in Florida and Maryland to a maximum of 0.26 in Vermont and 0.27 in Illinois. Thus, New Jersey falls approximately within the middle of that range with the 31st lowest CV across the states.

The U.S. Department of Education uses an equity factor in the Education Finance Incentive Grants (EFIG) program.[93] The equity factor is based on a pupil-weighted CV between the state average current expenditures per pupil and the current expenditures per pupil for all districts within the state that enroll more than 200 students. (Snyder, Dinkes, Sonnenberg, and Cornman 2018 p, 19). EFIG funding is designed to benefit districts in states that have less disparity between high-spending and low-spending districts. Ibid.

[92] The coefficient of variation (CV) is the ratio of the standard deviation of a group of observations to the mean of the group. Thus, the CV can be used to describe the relative level of variation within a population. A state with a larger CV has greater variation in spending per student among its districts than a state with a lower CV. (Snyder, Dinkes, Sonnenberg, and Cornman 2018 p, 19, n. 24).
[93] The EFIG grants totaled $4.2 million in FY 21, with New Jersey receiving $101.9 million.

Competitive Effects of Abbott v. Burke (1997) on Funding for Low Socioeconomic and Working-class districts

The Abbott IV decision in 1997 appears to have a steady competitive effect on the overall funding level for low socioeconomic and working-class districts. There is a direct increasing linear relationship between mean current expenditures per pupil and low socioeconomic districts from FY 98 through FY 15. Current expenditures per pupil in low socioeconomic districts steadily increased from FY 16 through FY 18, after slightly declining between FY 15 and FY 16, By FY 18, the gap in current expenditures per pupil between low socioeconomic districts and Abbott districts diminished to 7.3 percent.

There was also a direct increasing linear relationship between mean current expenditures per pupil and working-class districts from FY 98 through FY 15, although it slightly attenuated in FY 16. The steady increase in current expenditures per pupil in working class districts resumed in FY 17 and FY 18.

By FY 18, mean current expenditures per pupil in working-class districts were $19,185, closely following on the heels of Abbott districts at $19,976. Thus, by FY 18, the gap in mean current expenditures per pupil between working-class districts and Abbott districts was down to an astounding 4.1 percent. Furthermore, from FY 2014 to FY 2018, the percentage gap in current expenditures between working-class districts and Abbott districts decreased each and every year. As previously mentioned, the Abbott XX decision in 2009 that provided Abbott districts and 200 other districts funding under the "adequacy" level pursuant to SFRA directly increased funding in the low socioeconomic and working-class districts in FY 10 and FY 11. In order to examine the possible competitive effects of the Abbott v. Burke decision in 1997 on low socioeconomic and working- class districts, the federal, state, and local sources of revenue must also be

investigated on a longitudinal basis. Furthermore, the question of whether any judicial decisions such as Abbott XX apply; any legislative mandates, such as pre-school programs apply; and any programmatic changes by the state Department of Education occurred during the timeframe.

Finally, there is a less pronounced direct increasing linear relationship between mean current expenditures per pupil and middle-class districts between FY 98 and FY 18. In contrast, although there is a direct increasing linear relationship between mean current expenditures per pupil and upper middle-class districts from FY 98 to FY 13, and that relationship begins to level out between FY 14 and FY 18.

2. Funding from Abbott v. Burke reaches students through the combination of current instruction expenditures, instructional staff support expenditures, and expenditures for student support services

In considering whether my second hypothesis that increased funding from Abbott v. Burke reaches students in the classroom through the combination of current instruction expenditures, instructional staff support expenditures, and expenditures for student support services is accurate requires an analysis of whether various programs work for at-risk students. Efficiency can be enhanced by funneling resources into functions and programs that improve student performance. The proposition that the most crucial question of "how is the money being used" as advocated by Rebell and Grubb is fundamental to analyzing efficiency. In the context of Abbott v. Burke, the interrelationship between the foregoing variables and general administration as well as school administration must be analyzed. In some districts, it may be arguably more efficient to allocate resources directly into the classroom, whereas in others it may be more effective to increase student support services. In light of the media perception that "The problem

is not money…It is leadership and management," as set forth in the state's leading newspaper, it may be more efficient in some districts to increase resources for school administration and/or general administration. See infra, p. 4. For example, if the IEL ingredients of creating "classroom libraries, small learning centers, frequent assessments, uninterrupted time and "process writing" are going to be amply supported this may require investment in the functions of instruction, instructional support, school administration, and capital expenditures. See infra at p. 63. Instruction current expenditures per pupil were higher in Abbott districts than all other socio-economic districts from FY 2012-FY 2016 and were less than upper middle-class and the highest socioeconomic districts in FY 2017.

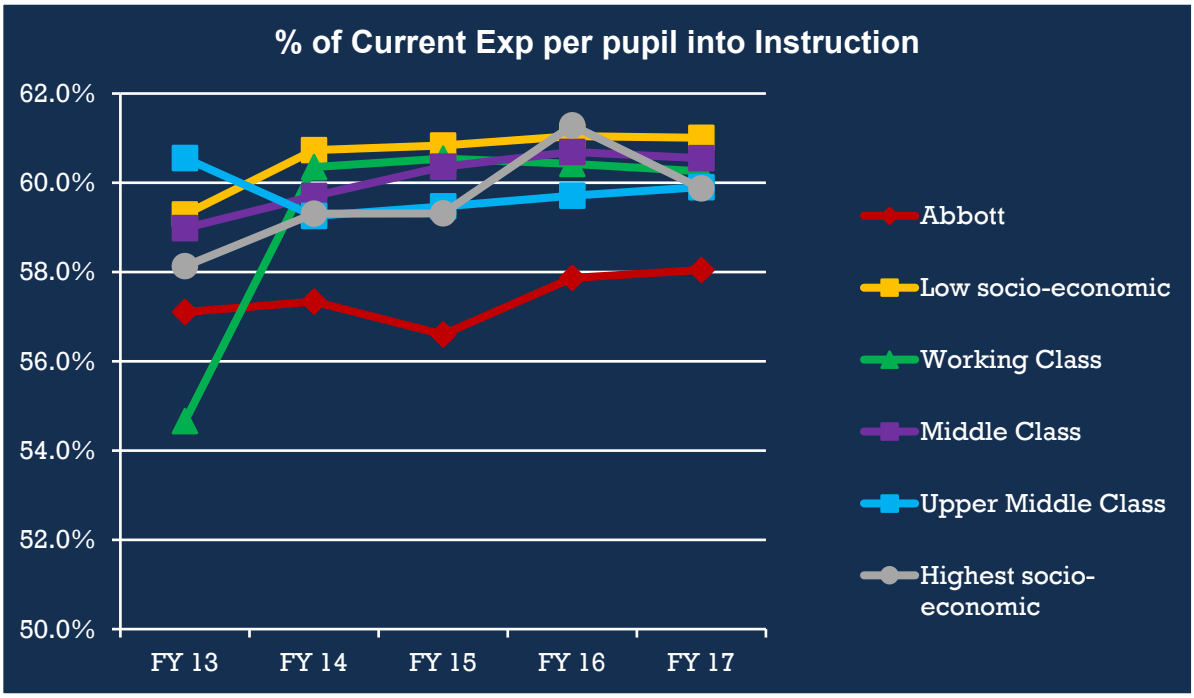
Table 4-4. Mean Instruction Expenditures Per Pupil by Socio-Economic Districts Selected Years FY 2013- FY 2017

District	No.	2012	2013	2014	2015	2016	2017
Abbott Districts	31	$ 11,516	$ 11,553	$ 11,627	$ 11,554	$ 11,160	$ 11,333
Low socio-economic	68	9,727	9,730	10,215	10,490	10,045	10,971
Working Class	58	9,407	9,636	10,054	10,308	10,397	10,865
Middle Class	74	9,298	9,418	9,881	10,277	10,717	11,080
Upper Middle Class	145	9,599	13,127	10,227	10,599	10,871	11,414
Highest socio-economic	114	9,733	9,849	10,361	10,816	11,037	11,928
Total	490						

SOURCE: School District Finance Survey (F-33) FY12-FY 17 Common Core of Data, NCES.

However, when instruction expenditures per pupil are considered on a percentage basis of overall current expenditures, Abbott districts are last compared to all other socio-economic districts from FY 13 to FY 17.

Figure 4-2. Percentage of Current Expenditures into Instructions by Socioeconomic Districts FY 13-FY17

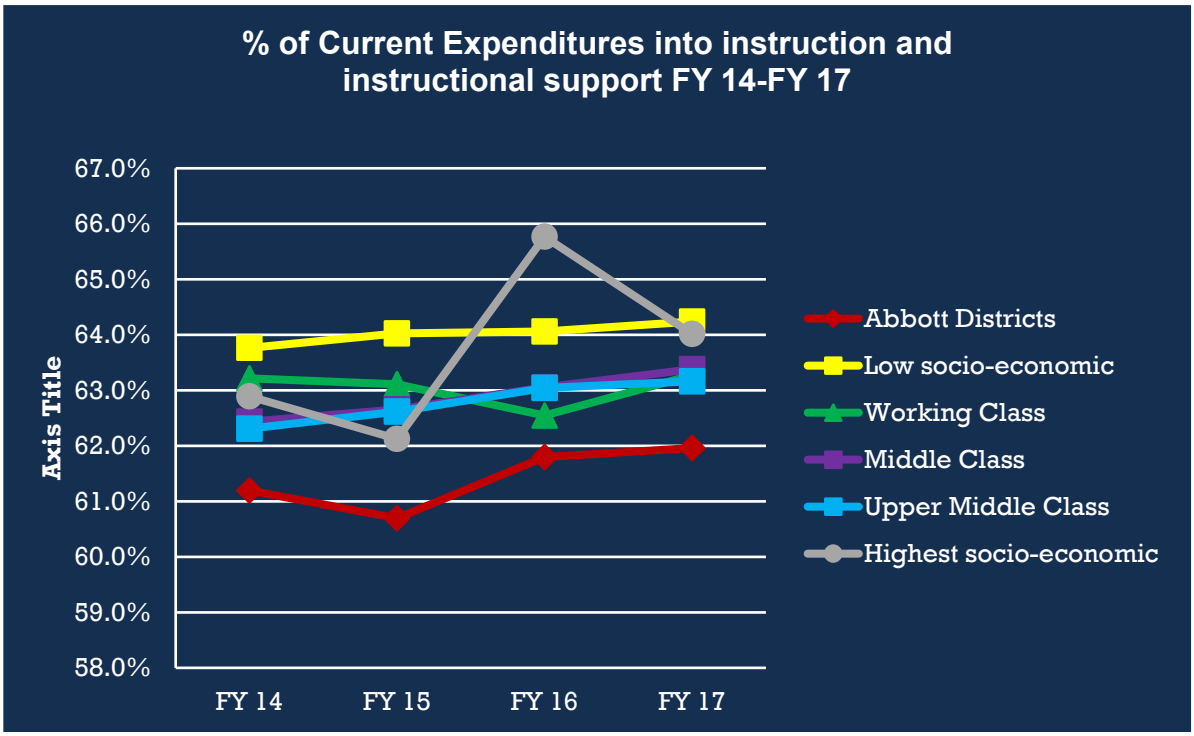


SOURCE: Author's calculations are based on School District Finance Survey (F-33); FY13- FY17 Common Core of Data, NCES.

For example, in the 2016-17 school year, 58 percent of current expenditures went to instruction in Abbott districts, as opposed to 61 percent in low socio-economic non-Abbott districts and 60.3 percent in working class districts. The difference of 3 percent being earmarked for instruction current expenditures between Abbott and low socioeconomic districts can be as high as approximately $700 per pupil, which can be significant. For example, if there are approximately 20 students in a classroom, the difference would be $14,000 for that one classroom on an annual basis. The additional $14,000 per annum could be used to pay for salaries and benefits for teachers and teacher aides, textbooks, supplies, and purchased services.

When instructional staff support expenditures are added to instruction expenditures, this encompasses the total amount of money that flows directly into the classroom.[94] On a national basis, in FY 18, instruction and instructional staff support expenditures accounted for 65.4 percent ($418.8 billion) of current expenditures. Salaries for instruction and instructional staff support were $258.7 billion, benefits were $110.6 billion, and other expenditures were $47.1 billion. (Cornman, Zhou, Howell, and Young 2020, table 6 and figure 3).

Figure 4-3. Percentage of Current Expenditures into Instruction and Instructional Support by Socioeconomic Districts FY 14-FY 17



SOURCE: Author's calculations are based on School District Finance Survey (F-33); FY14- FY17 Common Core of Data, NCES.

Abbott districts are spending less on a percentage basis on instruction and instructional staff support expenditures than the national average. While Abbott districts expend more per

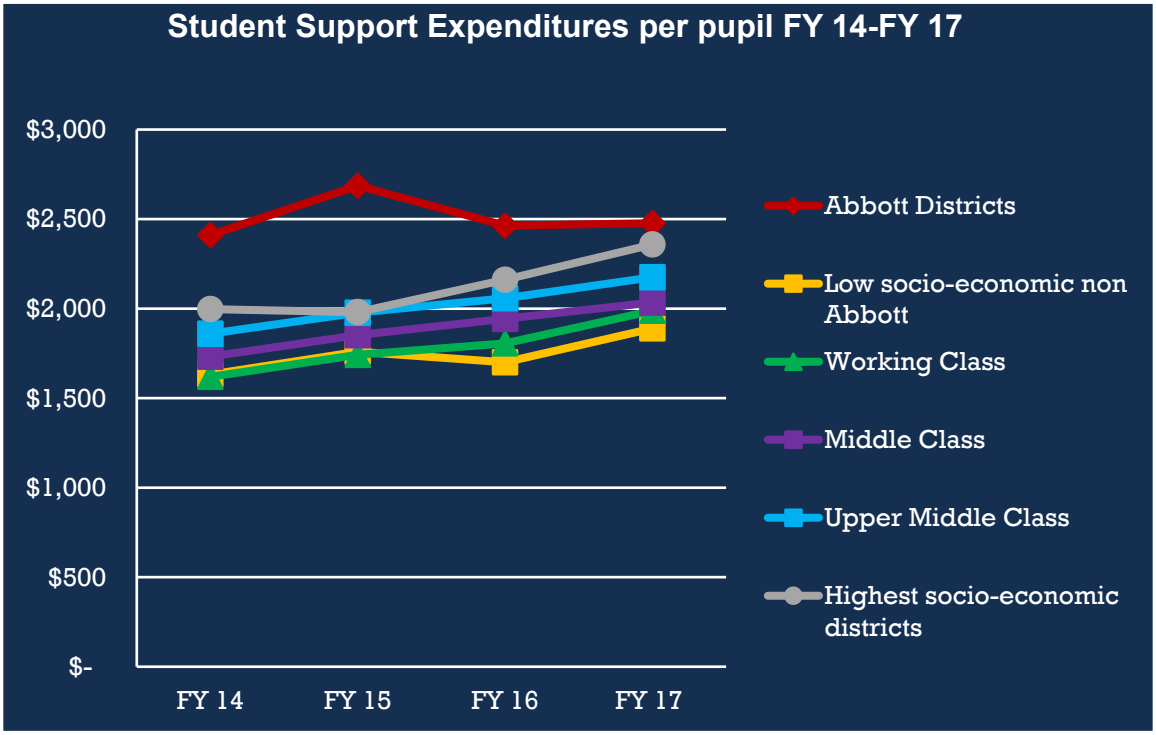
[94] Instructional staff support services cover activities that include instructional staff training, educational media (library and audiovisual), and other instructional staff support services.

pupil on instruction and instructional support than all other socioeconomic districts in New Jersey, on a percentage basis they slightly trail these districts. In FY 17, only 62 percent of current expenditures were comprised of instruction and instructional staff support expenditures in Abbott districts. In contrast, 64.2 percent of current expenditures were from instruction and instructional staff support expenditures in low socioeconomic districts; 63.3 percent in working class districts; 63.4 in middle class districts; 63.2 percent in upper middle class districts, and 64 percent the highest socio-economic districts. The low socioeconomic districts are the most focused on funneling resources for classroom activities, in comparison to all other socio-economic districts.

If Abbott districts are spending less on a percentage basis on instruction and instruction support than all other socioeconomic districts in New Jersey, where is the additional money from the Abbott v. Burke (1997) decision going? Between FY 2014-FY 2017, the Abbott districts are expending more on student support services than other socio-economic districts across the State.[95] It is apparent that the Abbott districts decided to allocate resources toward administrative, guidance, health, and logistical support services for their students.

[95] Expenditures for student support services includes expenditures for administrative, guidance, health, and logistical support that enhance instruction. Expenditures for attendance, social work, student accounting, counseling, student appraisal, information, record maintenance, and placement services are included. Expenditures for health services, psychological services, speech services, occupational therapy, physical therapy, and visually impaired services are also included.

Figure 4-4 Student Support Expenditures per pupil FY 14-FY 17



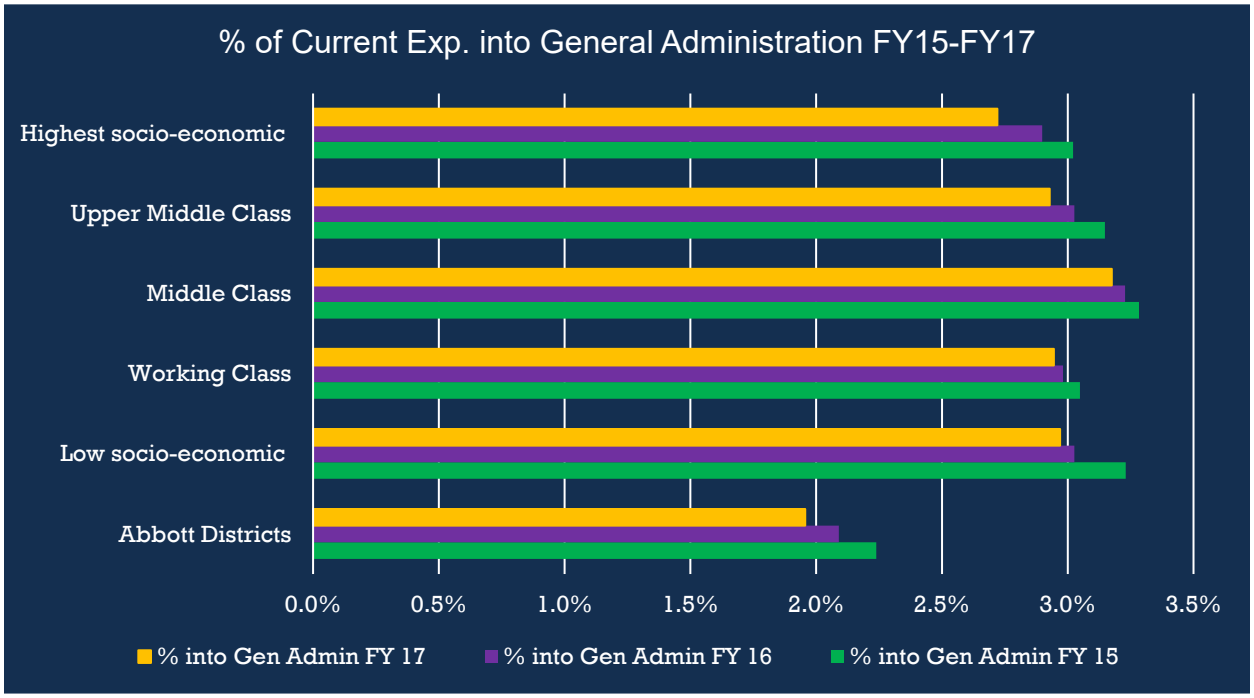
SOURCE: Author's calculations are based on School District Finance Survey (F-33); FY14- FY17 Common Core of Data, NCES.

In FY 17, on average Abbott districts expended $2,477 on expenditures per pupil for student support services, which amounts to 12.7 percent of current expenditures in Abbott districts. The mean expenditure of $2,477 for student support services in Abbott districts was the highest across all socioeconomic groups within the State. In contrast, low socioeconomic districts expended $1,989 per pupil, or 10.5 percent; working class districts expended $1,988 per pupil, or 11 percent; and middle-class districts expended $2,034 per pupil, or 11.1 percent of current expenditures on student support. Upper middle-class districts and highest socio-economic districts spend slightly more on student support on a percentage basis. Upper middle-class districts expended $2,175 per pupil, or 11.4 percent of current expenditures. The highest socio-

economic districts expended $2, 358 per pupil, or 11.8 percent of current expenditures on student support services.

In FY 17, Abbott districts expended approximately 2 percent of current expenditures on general administration costs, which is about 1 percent less than all other socioeconomic districts on a percentage basis.

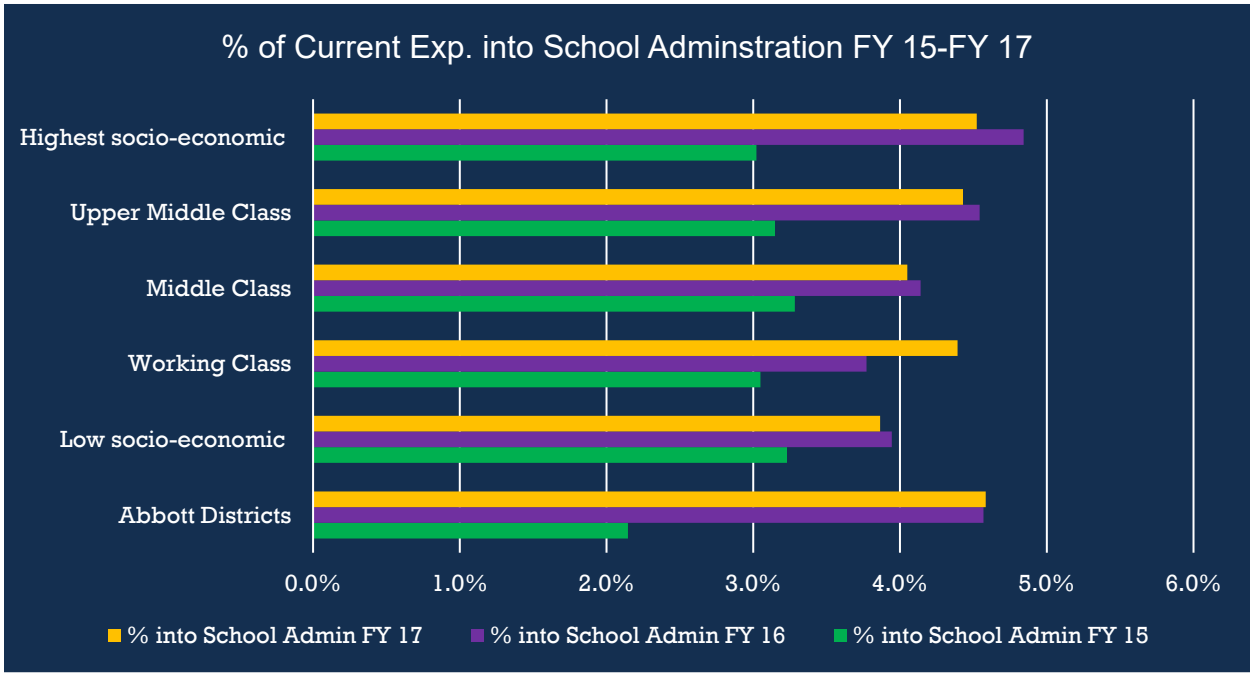
Figure 4-5. Percentage of Current Expenditures into General Administration by Socioeconomic Districts FY15-FY17



SOURCE: Author's calculations are based on School District Finance Survey (F-33); FY15- FY17 Common Core of Data, NCES.

Similarly in FY 17, Abbott districts expended 4.5 percent of current expenditures on school administration costs, which is equivalent to the highest socioeconomic districts and 1 percent higher in low socioeconomic, working class, middle, and upper middle class districts.

Figure 4-6. Percentage of Current Expenditures into School Administration by Socioeconomic Districts FY15-FY17



SOURCE: Author's calculations are based on School District Finance Survey (F-33); FY15- FY17 Common Core of Data, NCES.

In answer to the question whether Abbott districts effectively use the increased resources from the Abbott v. Burke decision in 1997, the Abbott districts appear to be very efficient in constraining expenditures for general and school administration as compared to other socioeconomic districts from FY15 to FY17. In fact, in FY 17 Abbott districts expended less per pupil on general administration ($382) than any other socioeconomic district. In FY 17, Abbott districts expended more on school administration per pupil ($895) than upper middle class, working class, middle class and low socioeconomic districts.

Table 4-5 General and School Administration Expenditures per Pupil FY15 – FY17

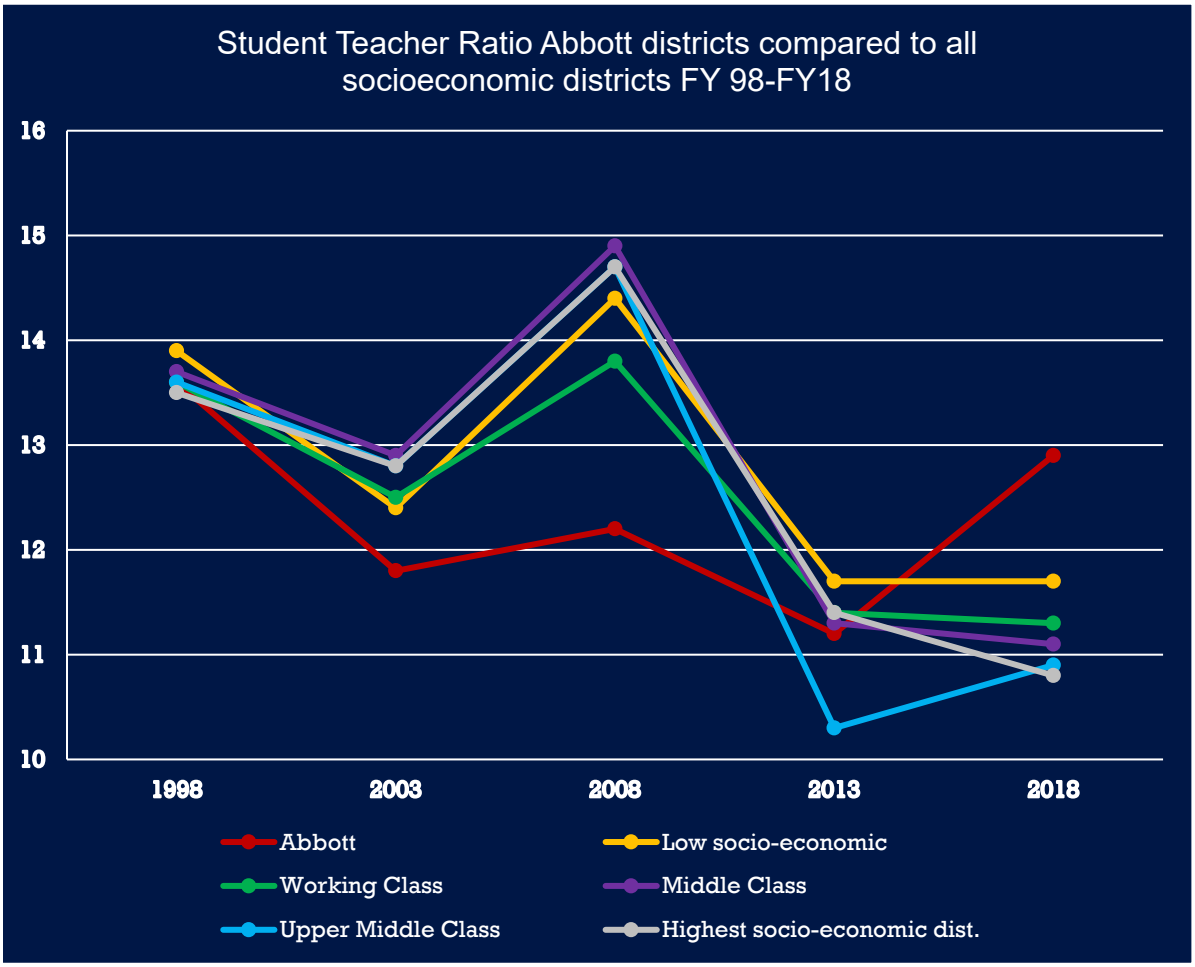
	School Administration per pupil				Gen Administration per pupil		
	FY 15	FY 16	FY 17		FY 15	FY 16	FY 17
Abbott Districts	$438	$881	$895		$457	$403	$382
Low socio-economic	557	649	695		557	498	534
Working Class	519	649	792		519	513	531
Middle Class	559	731	741		559	570	581
Upper Middle Class	561	827	844		561	551	558
Highest socio-economic	551	872	901		551	522	542

SOURCE: School District Finance Survey (F-33) FY15-FY 17 Common Core of Data, NCES.

3. Subsequent to Abbott v. Burke, the student teacher ratio initially decreased in Abbott districts

The student teacher ratio in the Abbott districts steadily declined from the Abbott v. Burke (1997) decision from FY 1998 through FY 2013. Furthermore, Abbott districts consistently had the lowest student teacher ratio from FY 1998 to FY 2015, as compared to other all other socioeconomic districts across the State.

Figure 4-7 Student Teacher Ratio Abbott in districts compared to all socioeconomic districts FY 98-FY18



SOURCE: School District Finance Survey (F-33) FY1998, FY 2003, FY2008, FY2013. FY2018 Common Core of Data, NCES.

The advantage in the student ratio that Abbott districts experienced as compared to all other socioeconomic districts from FY 1998 to FY 2015 began to dissipate in from FY 2016 to FY 2018, with low socioeconomic non-Abbott, working class, middle class, upper middle class, and the highest socioeconomic districts lowering their mean student teacher ratio below that of the Abbott districts by FY 2018. By 2018, the mean pupil/teacher ratio ranged from 10.8 in the highest socioeconomic groups; to 10.9 in upper middle class districts; 11.1 in middle class districts; 11.3 in working class districts; and 11.7 in low socioeconomic non-Abbott districts. In contrast, in FY 18 the student teacher ratio in Abbott districts was 12.9.

The student teacher ratio in Abbott districts increased from 11.5 in FY 2014 to 12.8 in FY 2015. In FY 2016, the student teacher ratio in those districts remained relatively level at 12.7. In FY 17, the student teacher slightly decreased to 11.8. However, as of FY 2018, the student teacher increased to 12.9, which is only slightly less than the ratio of 13.6 when the Abbott IV case was adjudicated in 1997.

Table 4-6 Student Teacher Ratio in Districts by Socioeconomic Status FY 2012-FY 2018

District socio-economic status	2012	2013	2014	2015	2016	2017	2018
Abbott	11.4	11.2	11.5	12.8	12.7	11.8	12.9
Low socio-economic	11.9	11.7	12.2	14.5	12.9	11.6	11.7
Working Class	12.1	11.4	11.9	13.9	11.9	17.6	11.3
Middle Class	12.2	11.3	12.4	14.2	11.7	11.5	11.1
Upper Middle Class	12	10.3	14.7	14.7	11.5	11	10.9
Highest socio-economic dist.	11.9	11.4	11.5	14.1	11.5	10.8	10.8

SOURCE: School District Finance Survey (F-33) FY 2012-FY 2018 Common Core of Data, NCES.

Competitive Effects of Abbott v. Burke (1997) on Student Teacher Ratios in all Socioeconomic Districts

All socioeconomic districts appeared to be more efficient by lowering their student teacher ratio up until 2013 and from FY 2015 to FY 2017. In fact, Abbott v. Burke (Abbott IV) appears to have had a positive competitive effect on the student teacher ratio in low socioeconomic non-Abbott districts in particular, as the ratio initially declined from the ramp-up year in FY 1998 to FY 2003; decreased between FY 2008 and FY 2013, (reversing a peak in 2008); and further declined during the FY 2015 to FY 2018 timeframe. In fact, by FY 2018, the student teacher ratio in low socioeconomic districts (11.7) was lower than that of Abbott districts (12.9).

Abbott IV also appears to have a positive competitive effect on the student teacher ratio in working-class districts as the ratio decreases between FY 1998 and FY 2003; as well as between FY 2008 and FY 2013; and remained relatively level from FY 2014 to FY 2018. Finally, Abbott IV appears to have a profound positive effect on the student teacher ratio in middle class districts in that the ratio declined from FY 1998 to FY 2003; consistently declined between FY 2008 and FY 2013; and slightly decreased between FY 2014 to FY 2018. See Figure 4-7.

Chapter 5: RESULTS for EFFECTS OF ABBOTT v. BURKE (1997) on STUDENT PERFORMANCE, LEARNING ENVIRONMENT and POST SCHOOL PLANS

My third hypothesis is that "The equity court decision of Abbott v. Burke (1997) improved the academic achievement of economically disadvantaged students in the Abbott districts as compared to low socioeconomic and working-class districts." I use the DD model to estimate the heterogeneous treatment effects of Abbott v. Burke (1997) on state standardized assessment scores for fourth, eighth, and eleventh grades; verbal and math SAT scores; and on graduating with the class. I use the CITS model to estimate the treatment effects of Abbott v. Burke, on state standardized assessment scores for eleventh grades, verbal and math SAT scores, and on graduating with the class subsequent to the court decision. Following my descriptive analyses in the previous chapter, I also use the DD model for a causal analysis to estimate the effects of Abbott v. Burke (1997) on the learning environment, including current expenditures per pupil, student teacher ratios, elementary class size, attendance, and discipline (suspensions). Finally, I use the DD model for a causal analysis to estimate the effects of Abbott v. Burke (1997) on post high school plans, including two year college, four year college, other post-secondary education, entering the military and employment.

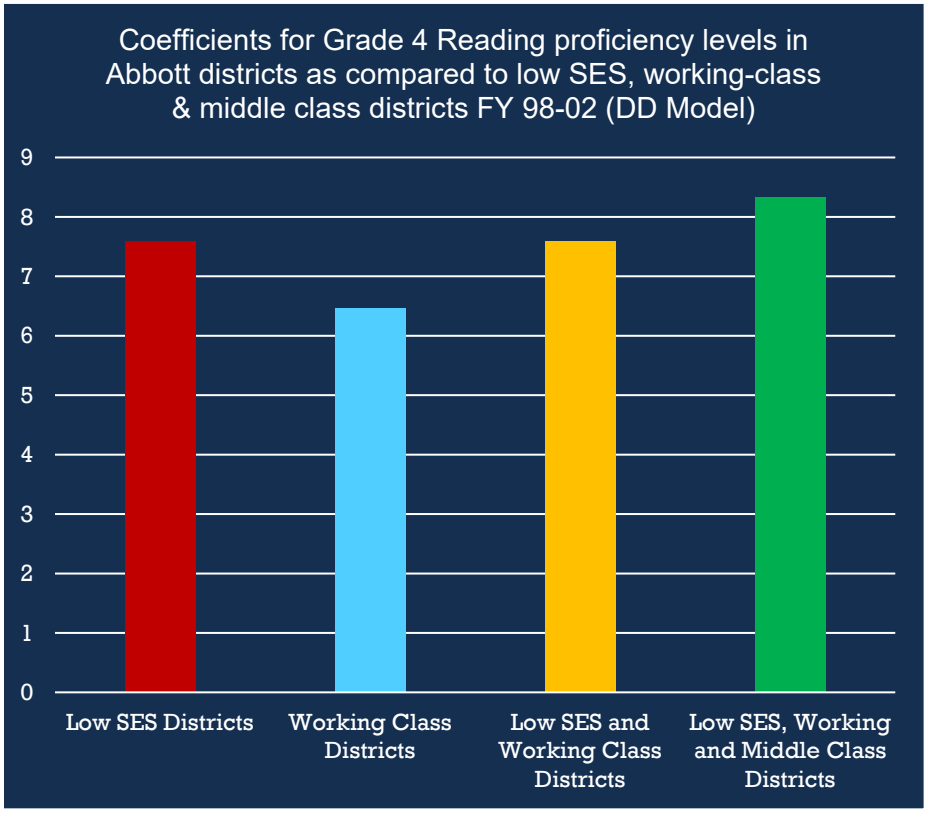
My fourth hypothesis is that "Abbott v. Burke, the resultant increases in State spending, and specific policies such as the Intensive Early Literacy program, and Abbott pre-school initiatives have a positive association with the academic achievement of economically disadvantaged students in Abbott districts." I use the DD model to estimate the treatment effects of IEL program by Abbott districts that were "high and medium implementers" of this policy on

state standardized assessment scores for fourth, eighth grades and eleventh grades; verbal and math SAT scores; and on graduating with the class.

5.1 Effects of Abbott v. Burke (1997) on Student Performance

The DD model suggests that Abbott IV increased the proficiency levels on fourth grade reading assessments of Abbott districts as compared to low socioeconomic districts between school year 1997-98 and 2001-02 ($p<0.01$). The DD model also implies that Abbott IV increased the proficiency levels on fourth grade reading assessments of Abbott districts as compared to working class districts ($p<.05$).

Figure 5-1 Estimated effects of Abbott v. Burke on Fourth Grade Reading Proficiency Scores FY 98-02 (DD Model)

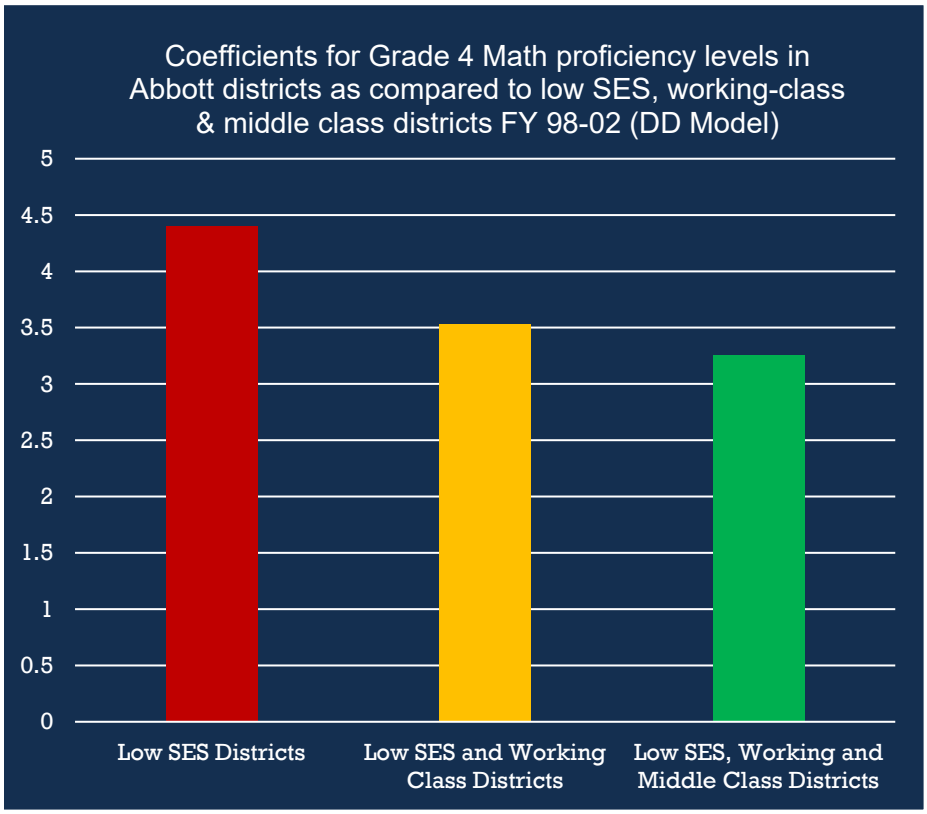


Source: NJASK-4 Standardized Tests FY 1998-2002, Common Core of Data, NCES FY 1998-2002

When the low socioeconomic and working class districts are combined as the comparison group, the DD model indicates that Abbott IV increased proficiency levels on fourth grade reading assessments of Abbott districts as compared to these districts ($p<.01$). Furthermore, the DD model suggests that Abbott IV increased proficiency levels on fourth grade reading assessments of Abbott districts as compared to low socioeconomic, working class, and middle-class districts ($p<.01$).

The DD model implies that Abbott IV increased proficiency levels on fourth grade math assessments of Abbott districts as compared to low socioeconomic districts ($p<.05$). The DD model also suggests that Abbott IV increased proficiency levels on fourth grade math assessments of Abbott districts as compared to low socioeconomic and working class-districts ($p<0.1$). Furthermore, the DD model indicates that Abbott IV increased proficiency levels on fourth grade math assessments of Abbott districts as compared to the combination of low socioeconomic, working class, and middle-class districts. ($p<.01$).

Figure 5-2 Estimated effects of <u>Abbott v. Burke</u> on Fourth Grade Math Proficiency Scores FY 98-02 (DD Model)



Source: NJASK-4 Standardized Tests FY 1998-2002, Common Core of Data, NCES FY 1998-2002

Table 5-1 The estimated effects of Abbott v. Burke on Fourth, Eighth, Eleventh Grade Proficiency Test scores; SAT scores; and Graduating with the Class 1998-2002 DD Model

	Grade 4 Reading		Grade 4 Math		Grade 8 Reading	Grade 8 Math	Grade 11 Reading	Grade 11 Math	SAT Verbal	Sat Math	Grad w Class	
Panel A Low SES Districts	7.6	**	4.404	**	0.707	1.075	1.407	-1.666	-2.515	-2.2	-2.271	***
Sample size	394		394		334	334	272	272	309	309	302	
Panel B Working Class Districts	6.459	**	2.018		0.292	2.504	1.094	0.139	-0.707	0.0431	-3.561	***
Sample size	342		338		318	318	283	283	326	326	324	
Panel C Low SES and Working Class Districts	7.6	**	3.534	*	0.172	1.817	1.32	0.391	-1.804	-1.298	-2.88	***
Sample size	617		613		529	529	401	401	457	457	461	
Panel D Low SES, Working and Middle Class Districts	8.331	***	3.251	*	0.267	1.421	2.114	1.63	-2.266	-2.7	-2.813	***
Sample size	885		881		771	771	568	568	645	645	651	

Notes: Each column within a panel is a separate regression with a different outcome.

***p<0.01; **p<0.05; *p<0.1

All specifications include district fixed effects.

Source: NJASK- Grade 4, 8, and GEPA Grade 11 Standardized Tests FY 1998-2002, Common Core of Data, NCES FY 1998-2002, SAT District Scores FY 1998-2002, N.J. Graduation Rates Archives Data FY 1998-2002

The DD model suggests that Abbott IV did not have any effect on proficiency levels of eighth grade reading scores of Abbott districts as compared to low socioeconomic districts

between FY 98 and FY 2002, as there is not a statistically significant relationship.[96] The DD model also suggests that Abbott IV did not have any effect on proficiency levels of eighth grade math scores of Abbott districts as compared to low socioeconomic districts as there is not a statistically significant relationship.[97]

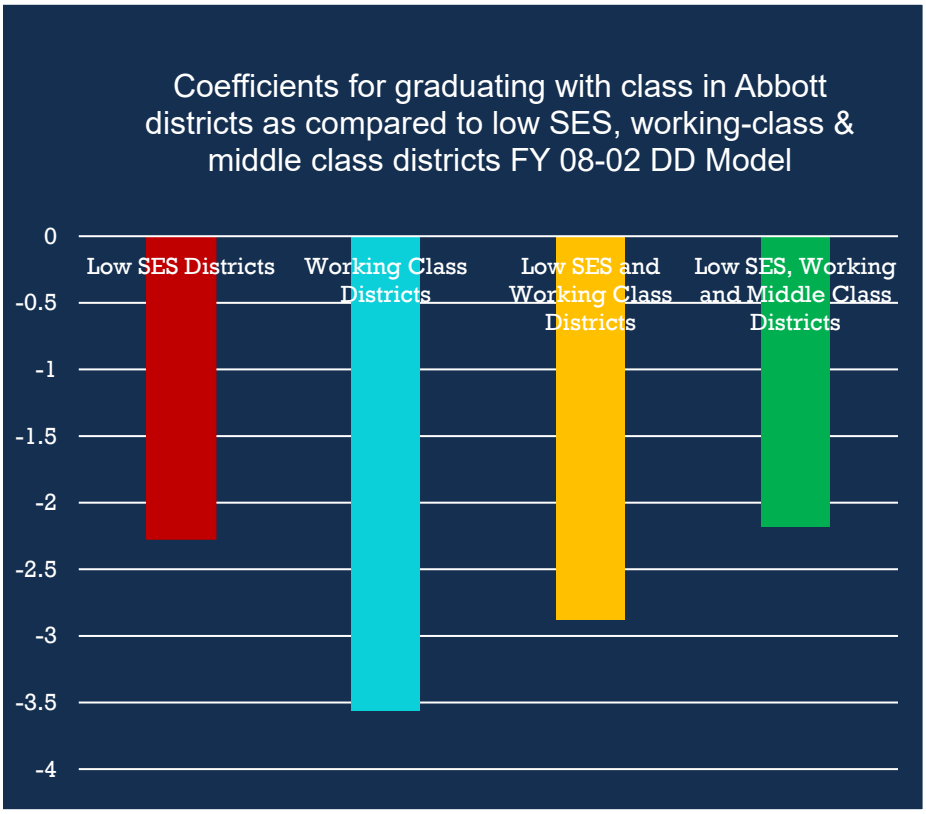
The DD model implies that Abbott IV did not have any effect on proficiency levels of eleventh grade reading scores of Abbott districts as compared to low socioeconomic districts between FY 98 and FY 2002 as there is not a statistically significant relationship. The DD model also indicates that Abbott IV did not have any effect on proficiency levels of eleventh grade math scores of Abbott districts as compared to low socioeconomic districts as there is not a statistically significant relationship.

The DD model suggests that Abbott IV did not have any effect on the SAT math and verbal score of students in Abbott districts as compared to low socioeconomic districts between FY 98 and FY 2002 as there is not a statistically significant relationship. The DD model also implies that Abbott IV did not have any effect on the SAT math and verbal score of students in Abbott districts as compared to working class districts between FY 98 and FY 2002 as there is not a statistically significant relationship.

[96]There is also not a statistically significant relationship between Abbott v. Burke and eighth grade reading scores of Abbott districts compared to working class districts; to low socioeconomic and working class districts; or compared to the combination of low socioeconomic, working class, and middle-class districts.

[97]The DD model does not suggest that Abbott IV increased proficiency on eighth grade math scores of Abbott districts as compared to working class districts; to low socioeconomic and working class districts; or the combination of low socioeconomic, working class, and middle-class districts. as there is not a statistically significant relationship.

Figure 5-3 Estimated effects of Abbott v. Burke on Graduating with the High School Class FY 98-02 (DD Model)



N.J. Graduation Rates Archives Data FY 1998-2002, Common Core of Data, NCES FY 1998-2002

The DD model suggests that Abbott IV had a negative effect on students graduating with the class in Abbott districts as compared to low socioeconomic districts ($p<.01$). The DD model also indicates that Abbott IV had a negative effect on students graduating with the class in Abbott districts as compared to working class districts ($p<.01$). Finally, the DD model demonstrates Abbott IV also had a negative effect on students graduating with the class in Abbott districts as compared to the combination of low socioeconomic districts and working class districts as well as compared to the combination of low socioeconomic districts, working class districts, and middle class districts ($p<.01$).

As previously mentioned, if baseline data is available for four years prior to the intervention, the CITS estimation may be utilized. See infra, p. 84. The CITS model measures "whether─once the program begins─the treatment group deviates from its pre-intervention ***trend*** by a greater amount than does the comparison group." (Somers, Zhu, Jacob, and Bloom 2013, p. 29). The outcomes of eleventh grade standardized test scores, average district SAT scores, graduating with the class, attendance, discipline (suspensions), and post-high school plans are available for New Jersey districts back to school year 1994-95. As previously mentioned, there are four data points available prior to when the intervention occurs in school year 1998-99. See infra p. 85. Thus, the availability of this data back to school year 1994-95 allows me to examine the "trend" of these variables prior to the intervention in school year 1998-99, rather than just the baseline mean in the DD model.

Kelly Hallberg and her colleagues advise that the interpretation of CITS results should consider that "The longer the lag between the collection of outcome data and the implementation of treatment, the less confidence one should have in causal interpretation of the estimated effects." (Hallberg, Williams, Swanlund, and Eno, 2018, p. 299). In my study, the outcomes of eleventh grade standardized test scores, average district SAT scores, graduating with the class, and attendance in particular were collected on an annual basis and within three years of when the intervention occurred in school year 1998-99.

The CITS model suggests that Abbott IV did not have any effect on proficiency levels of eleventh grade reading scores of Abbott districts as compared to low socioeconomic districts as there is not a statistically significant relationship. Similarly, the CITS model suggests that Abbott IV did not have any effect on proficiency levels of eleventh grade reading scores of Abbott districts as compared to working class districts as there is not a statistically significant

relationship. When low socioeconomic, working class, and middle-class districts are combined, the CITS model suggests that Abbott IV did not have any effect on proficiency levels of eleventh grade reading scores of Abbott districts as compared to these districts as there is not a statistically significant relationship.

Table 5-2 The estimated effects of Abbott v. Burke on Eleventh Grade Proficiency Test scores; Graduating with Class and SAT scores (1995-2002) CITS Model

	Grade 11 Reading	Grade 11 Math		Graduating w class		SAT Verbal		SAT Math	
Panel A Low SES Districts	-1.635	-4.056	**	-1.526	***	-13.024		-11.686	
Sample size	272	272		302		309		309	
Panel B Working Class Districts	-1.481	-3.028	**	-2.251	***	2.011	***	5.564	***
Sample size	283	283		324		326		326	
Panel C Low SES and Working Class Districts	-1.522	-3.688	***	-1.922	***	-5.212		-2.758	
Sample size	401			461		457		457	
Panel D Low SES, Working and Middle Class Districts	-0.816	-2.901	**	-1.879	***	-3.233		-.466	
Sample size	568	568		651		645		645	

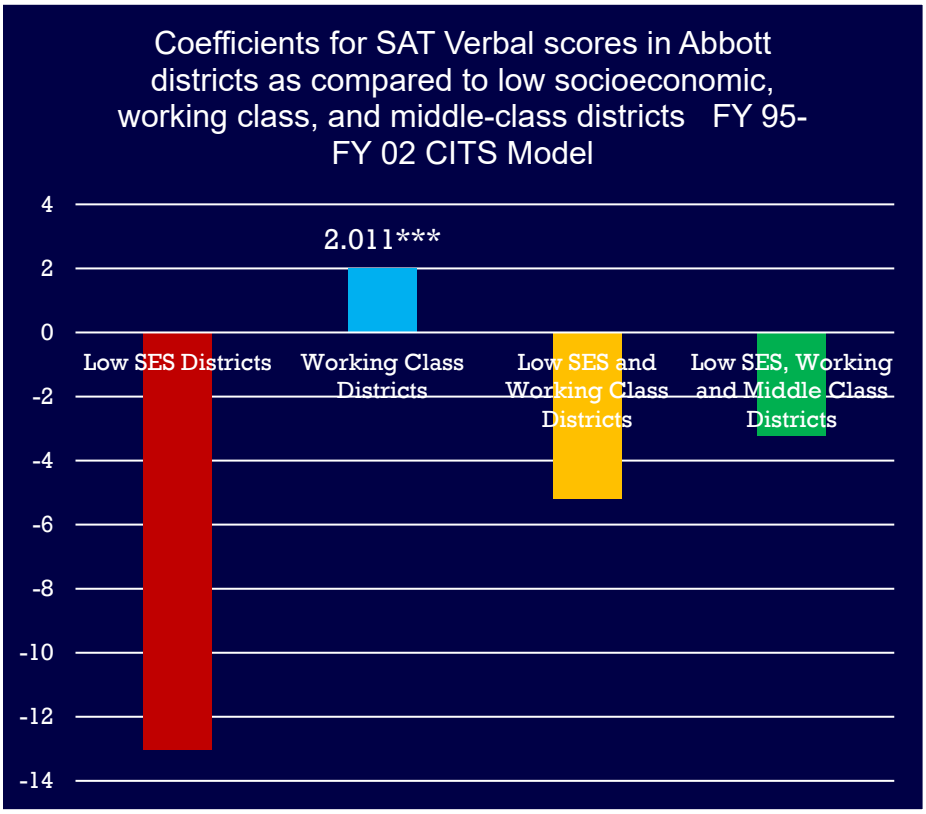
Notes: Each column within a panel is a separate regression.
All specifications include district fixed effects.

***p<0.01; **p<0.05; *p<0.1

Source: NJASK-11 grade Standardized Tests FY 1998-2002, Common Core of Data, NCES FY 1998-2002, SAT District Scores FY 1998-2002, N.J. Graduation Rates Archives Data FY 1998-2002

The CITS model suggests that Abbott IV has a slight negative effect on eleventh-grade math scores in Abbott districts as compared to low socioeconomic districts (p<0.05). The CITS model further suggests that Abbott IV has a slight negative effect on eleventh-grade math scores in Abbott districts as compared to low socioeconomic and working-class districts (p<0.05).

Figure 5-4 Estimated effects of Abbott v. Burke on SAT Verbal Scores in Abbott Districts FY 1998-2002 (CITS Model)

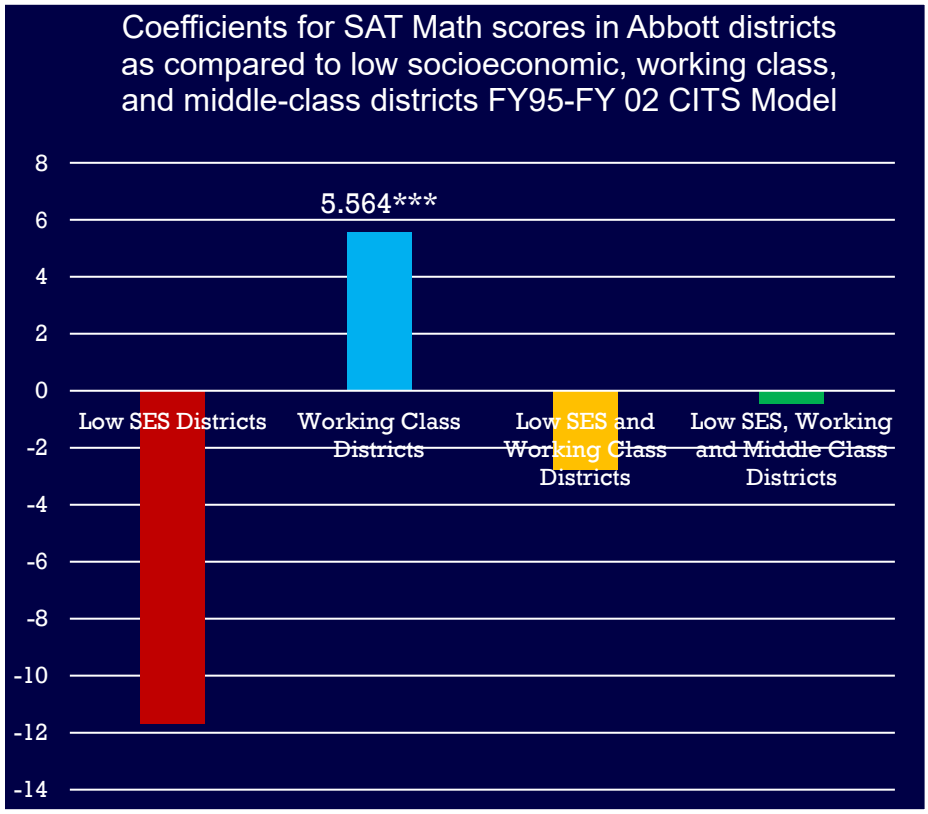


Source; SAT District Scores FY 1998-2002, Common Core of Data, NCES FY 1995-2002

The CITS model suggests that Abbott IV did not have any effect on SAT verbal or math scores in Abbott districts as compared to low SES districts as there is not a statistically significant relationship. The CITS model does suggest that Abbott IV increased SAT verbal points in Abbott districts as compared to working class districts between 1995 and 2002 (p<0.01).[98]

[98] The CITS model suggests that Abbott IV did not have any effect on SAT verbal points in Abbott districts as compared to the combination of low SES and working class districts as there is not a statistically significant relationship. Furthermore, when low socioeconomic districts are grouped with working and middle class districts as the comparison group, the CITS model suggests that Abbott IV did not have any effect on SAT verbal points in Abbott districts as compared to these districts.

Figure 5-5 Estimated effects of Abbott v. Burke on SAT Math Scores in Abbott Districts FY 1998-2002 (CITS Model)



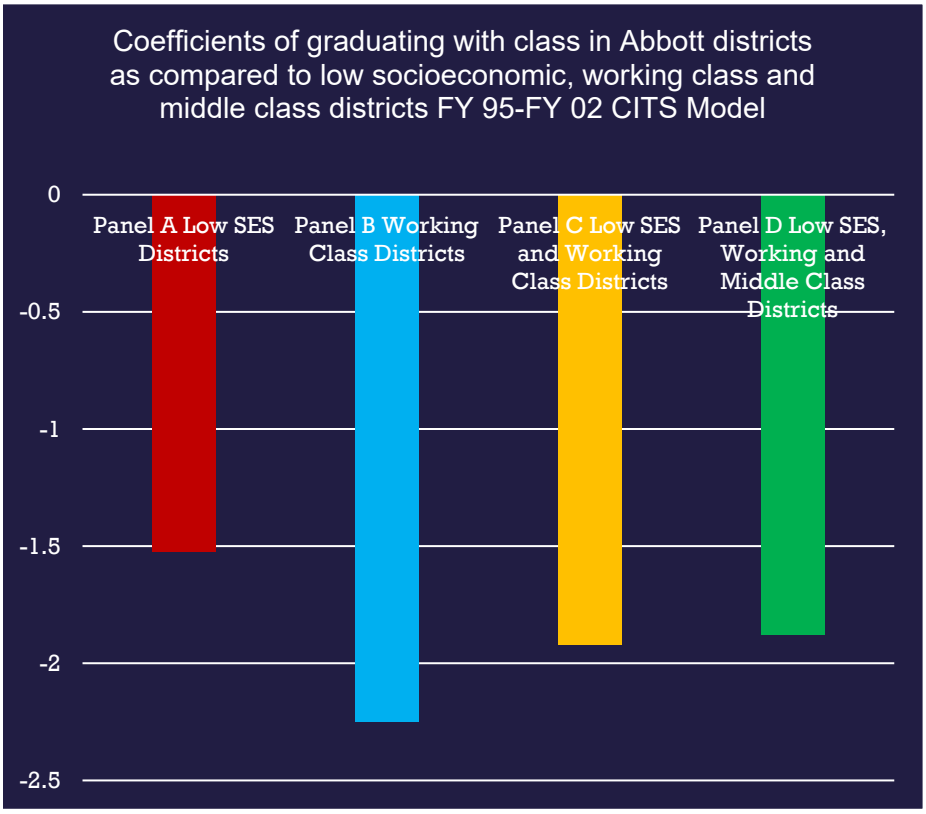
Source; SAT District Scores FY 1998-2002, Common Core of Data, NCES FY 1995-2002

This positive association persists with SAT math scores, as the CITS model suggests that Abbott IV increased SAT math scores in Abbott districts as compared to working class districts (p<0.01).[99] The positive statistically significant relationship between Abbott districts and SAT Verbal and Math scores as suggested by CITS model stands in contrast to the lack of a significantly significant relationship for the same variables utilizing the DD model, Thus, the trend of SAT Verbal and Math scores in Abbott districts increased as compared to working class

[99] The CITS model suggests that Abbott IV did not have any effect on SAT math points in Abbott districts as compared as compared to low socioeconomic and working class districts; or compared to the combination of low SES, working class, and middle class districts as there is not a statistically significant relationship.

districts, as opposed to the lack of a statistically finding for the baseline mean of SAT scores analyzed in the DD model.

Figure 5-6 Estimated effects of Abbott v. Burke on Graduating with the High School Class in Abbott Districts FY 1998-2002 (CITS Model)



Source; Graduating with the class data from the N.J. Archives data; FY 1995 to FY 2002

The CITS model suggests that Abbott IV had a negative effect on students graduating with the class in Abbott districts as compared to low socioeconomic districts ($p<0.01$). The negative relationship persists when working class districts are the comparison group ($p<0.01$). There is also a negative relationship between Abbot IV and students graduating with the class in Abbott districts, as compared to the pairing of low socioeconomic and working class districts ($p<0.01$). Finally, when low socioeconomic, working class, and middle-class districts are

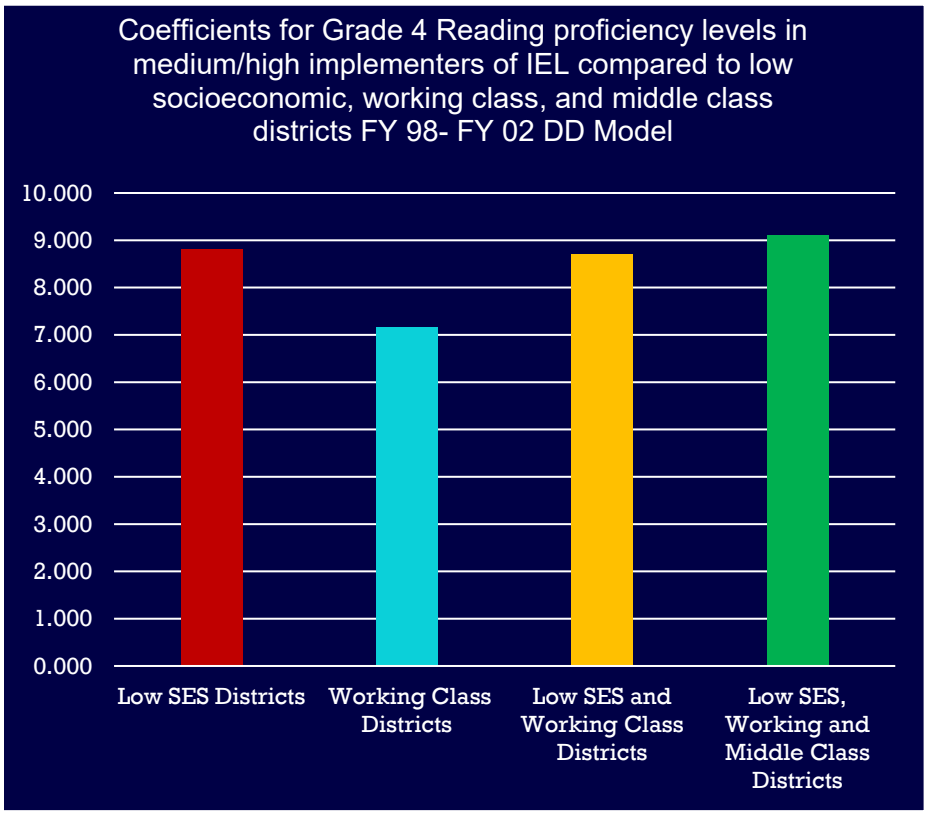
grouped together as the comparison group, the CITS model suggests that Abbott IV decreased the number of students graduating with the class in Abbott districts as compared to the combination of these districts ($p<0.01$). This negative statistically significant relationship between Abbott districts and graduating with the class as suggested by CITS model as compared to the combination of low socioeconomic, working class, and middle-class districts is consistent with the negative association for the same variables implied by the DD model.

In a limitation that must be recognized in my study, the district-level CITS only provides estimates of district level effects, not what would have happened to individual students or students under the treatment conditions. See (Hallberg, Williams, Swanlund, and Eno 2018, p. 302).

5.2 Effects of Intensive Early Literacy Program (IEL) program on Abbott Districts

The DD model suggests that the IEL program increased the proficiency levels on fourth grade reading assessments of the Abbott districts who were "high and medium implementers" of this policy as compared to low socioeconomic districts ($p<.05$). Specifically the DD model indicates that the IEL program increased the proficiency levels on fourth grade reading assessments of Orange, Pleasantville, Elizabeth, Jersey City, Union City, Asbury Park, Bridgeton, East Orange, Irvington, and Newark, as compared to low socioeconomic districts between 1998 and 2002 ($p<.05$).

Figure 5-7 The estimated effects of Abbott v. Burke Intensive Early Literacy (IEL) program in medium/high implementers on Fourth Grade Proficiency Test scores FY 1998-2002 (DD Model)



Source: ASK Grade 4 Standardized Tests FY 1998-2002; Common Core of Data, NCES FY 1995-2002

Furthermore, the DD model indicates that the IEL program increased the proficiency levels on fourth grade reading assessments of the Abbott districts who were "high and medium implementers" of this policy as compared to working class districts ($p<.1$). The IEL program also increased the proficiency levels on fourth grade reading assessments of the Abbott districts who were "high and medium implementers" of this policy when low socioeconomic districts and working class districts are grouped together as the comparison groups ($p<.01$). Finally, the IEL program utilized by "high and medium implementers" of this policy increased the proficiency levels of Abbott districts, as compared to low socioeconomic, working class, and middle-class districts ($p<.01$).

Table 5-3 The estimated effects of Abbott v. Burke Intensive Early Literacy (IEL) program of "High and Medium" Implementers on Fourth Grade Proficiency Test scores 1998-2002 DD Model

	Grade 4 Reading		Grade 4 Math	Grade 8 Reading	Grade 8 Math	
Panel A Low SES Districts	8.810	**	2.96	-1.925	2.77	
Sample size	311		311	251	251	
Panel B Working Class Districts	7.165	*	0.060	-0.502	4.313	**
Sample size	267		263	238	234	
Panel C Low SES and Working Class Districts	8.698	**	2.183	-1.293	3.502	
Sample size	538		534	449	449	
Panel D Low SES, Working and Middle Class Districts	9.103	**	2.419	-1.476	3.220	
Sample size	810		806	695	691	

Notes: Each column with a panel is a separate regression with a different outcome.
***p<0.01; **p<0.05; *p<0.1
All specifications include district fixed effects.

In fact, the size of the coefficient (8.81) from analysis of whether the IEL program increased the proficiency levels on fourth grade reading assessments of the Abbott districts who were "high and medium implementers" of this policy were higher than the coefficient (7.6) from the positive effect Abbott IV had on proficiency levels on fourth grade reading assessments of Abbott districts as compared to low socioeconomic districts ($p<0.01$).

Upon advice from a team of professors from Columbia University, the "medium and high implementers" of IEL were removed from the Abbott districts for purposes of running the model. Thus, the second treatment group was comprised of Abbott districts who were "low implementers" of the IEL policy. The comparison group remained low socioeconomic districts.

The DD model demonstrates that the IEL program also increased the proficiency levels on fourth grade reading assessments of the Abbott districts who were "low implementers" of this policy as compared to low socioeconomic districts ($p<.05$). In fact, the coefficient size of 8.06 for the increase in the reading proficiency level for "low implementers" of IEL was only slightly below the coefficient size of 8.81 for "high and medium implementers" when the same regression is applied.

The DD model suggests that the IEL program did not have any effect on the proficiency levels on fourth grade math assessments of the Abbott districts who were "high and medium implementers" of this policy as compared to low socioeconomic districts as there was not a statistically significant relationship between 1998 and 2002. The lack of a statistically significant relationship between "high and medium implementers" of IEL and fourth grade math proficiency

levels pervades when the comparison groups are working class; the combination of low socioeconomic and working class districts; and when low socioeconomic, working class, and middle-class districts are grouped together.

The DD model further suggests that the IEL program did not have any effect on the proficiency levels on eighth grade reading or math assessments of the Abbott districts who were "high and medium implementers" of this policy as compared to low socioeconomic districts as there was not a statistically significant relationship. The lack of a statistically significant relationship between "high and medium implementers" of IEL and proficiency levels on eighth grade reading and math assessments persists as compared to working class districts; the tandem of low socioeconomic and working-class districts; or the combination of low socioeconomic, working class, and middle class districts.

5.3 Effects of Abbott v. Burke (1997) on Learning Environment

Subsequent to the Abbott v. Burke decision in 1997 until school year 2001-02, the DD model indicates current expenditures per pupil increased in Abbott districts as compared to low socioeconomic districts ($p<0.01$). Current expenditures per pupil also increased in Abbott districts as compared to working class districts ($p<0.01$). Finally, current expenditures per pupil also increased in Abbott districts as compared to the combination of low socioeconomic and working-class districts ($p<0.01$).

Table 5-4 The estimated effects of Abbott v. Burke on Current Expenditures per Pupil, Student Teacher Ratio, Elementary Class Size, Attendance and Discipline 1998-2002 DD Model

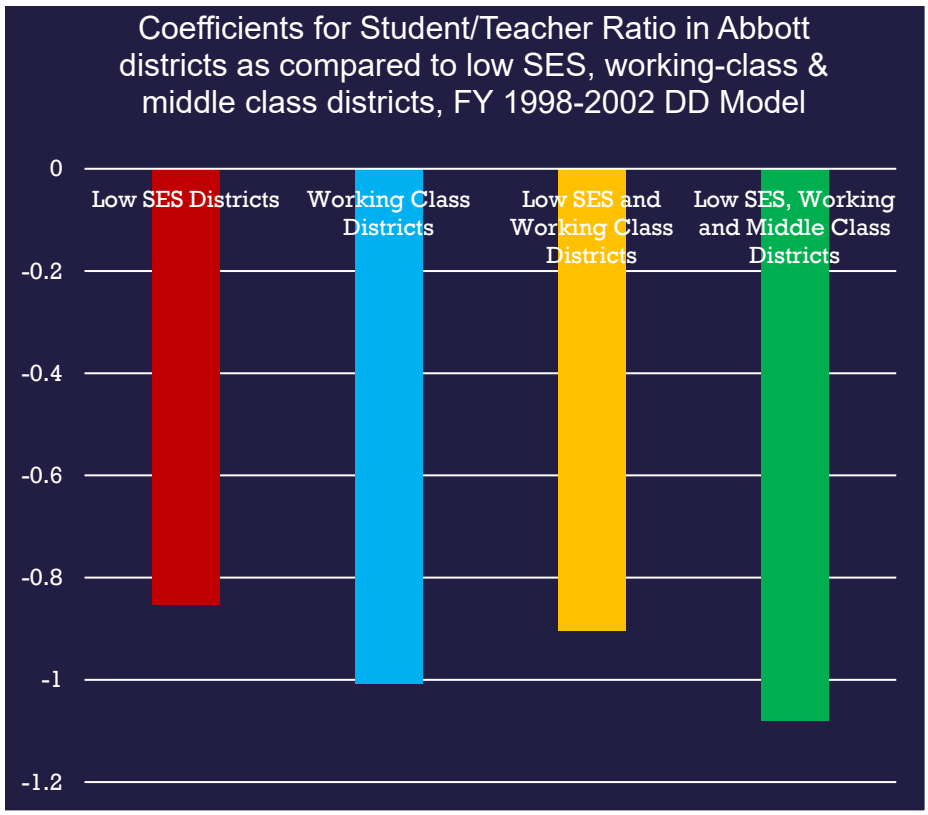
	Log of Expenditures per pupil		Expenditures per pupil		Student/ Teacher Ratio		Class Size (Elem)		Attendance (Elem)		Suspensions (Elem)
Panel A Low SES Districts	0.064	***	992.56	***	-0.853	***	-0.166		0.029		2.365
Sample size	499		499		591		591		497		477
Panel B Working Class Districts	0.086	***	1170.11	***	-1.008	***	-0.612		-1.734	*	0.222
Sample size	434		434		501		506		428		412
Panel C Low SES and Working Class Districts	0.075	***	1097.56	***	-0.912	***	-0.323		-0.728	*	0.262
Sample size	784		784		921		925		781		757
Panel D Low SES, Working and Middle Class Districts					-1.08	***	-0.468	*			0.356
Sample size					1807		1343				1100

Notes: Each column within a panel is a separate regression with a different outcome.
***p<0.01; **p<0.05; *p<0.1

All specifications include district fixed effects.

The DD model indicates that Abbott IV reduced student/teacher ratios in Abbott districts compared to non-Abbott low socioeconomic districts ($p<0.01$).[100] The DD model also suggests that Abbott IV reduced student/teacher ratios in Abbott districts somewhat compared to working class districts ($p<0.01$); as well as compared to the coupling of low socioeconomic and working-class districts ($p<.01$). Finally, when low socioeconomic, working class, and middle-class districts are combined in comparison to Abbott districts, the DD model demonstrates that Abbott IV reduced student/teacher ratios in Abbott districts compared to these districts ($p<0.01$).

Figure 5-8 The estimated effects of Abbott v. Burke on the Student Teacher Ratio FY 1998-2002 (DD Model)

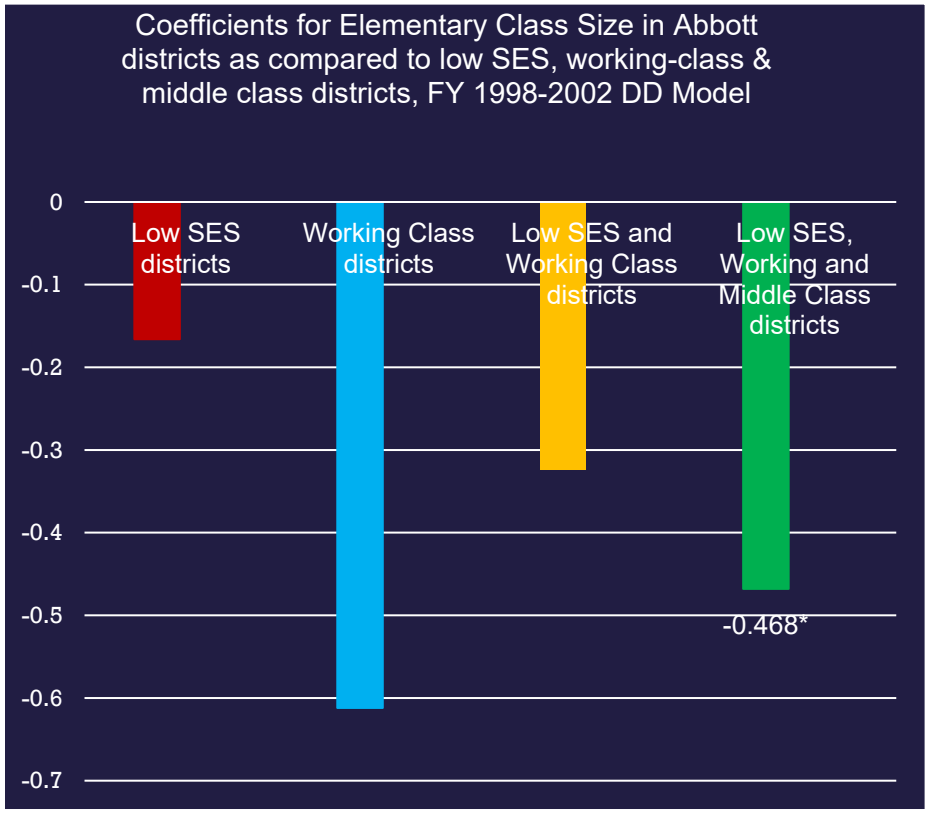


[100] The DD model suggests that the IEL program decreased the student teacher ratios in Abbott districts who were "high and medium implementers" of this policy as compared to low socioeconomic districts ($p<.01$).

Source: Common Core of Data, NCES FY 1998-2002

There was not a statistically significant relationship between Abbott IV and elementary class size in Abbott districts, as compared to low socioeconomic districts from FY 1998 to FY 2002; nor as compared to working class districts.[101] However when the combination of socioeconomic, working class, and middle-class districts is the comparison group, the DD model demonstrates that Abbott IV reduced elementary class size in Abbott districts ($p<0.1$).

Figure 5-9 The estimated effects of Abbott v. Burke on the Elementary Class Size FY 1998-2002 (DD Model)



Source: New Jersey Archives Data FY 1998-2002; Common Data, NCES FY 1998-2002

The DD model indicates that Abbott IV did not have any effect on the attendance rates of students in Abbott districts as compared to low socioeconomic districts as there is not a

[101] The DD model also suggests that the IEL program did not have any effect on elementary class size in Abbott districts who were "high and medium implementers" of this policy as compared to low socioeconomic districts as there was not a statistically significant relationship.

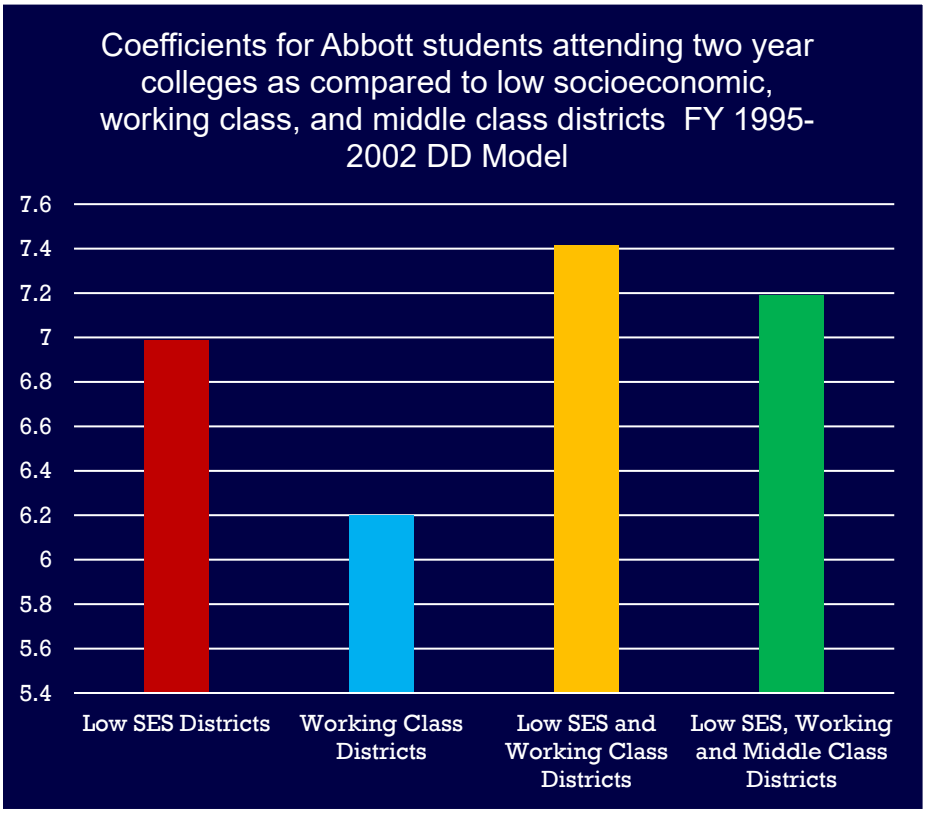
statistically significant relationship between FY 98 and FY 2002. The DD model implies that Abbott IV had a slight negative effect on the attendance rates of students in Abbott districts as compared to working-class districts ($p<.0.1$). The negative association between Abbott IV and the attendance rates of students in Abbott districts persists when low socioeconomic and working class districts are combined as the comparison group ($p<.0.1$).

Abbott IV did not have any effect on elementary school suspensions of students in Abbott districts as compared to low socioeconomic districts as there is not a statistically significant relationship between FY 98 and FY 2002. The lack of a statistically significant relationship between Abbott IV and elementary school suspensions pervades whether the comparison group is working-class districts; low socioeconomic districts; or low socioeconomic, working, and middle class districts.

5.4 Effects of Abbott v. Burke (1997) on Post-High School Plans

The DD model suggests that Abbott IV increased the number of students in Abbott districts enrolling in two-year colleges as compared to low socioeconomic districts between school year 1997-98 and 2001-02 ($p<0.05$). The DD model implies that Abbott IV increased the number of students in Abbott districts enrolling in two-year colleges as compared to working class districts ($p<0.05$). The DD model also shows that Abbott IV increased the number of students in Abbott districts enrolling in two-year colleges when low socioeconomic and working-class districts are combined ($p<0.01$). Finally, the positive effect of Abbott IV on students from Abbott districts attending two-year colleges continues when low socioeconomic, working class, and middle-class districts are grouped together ($p<0.01$).

Figure 5-10 The estimated effects of Abbott v. Burke on students attending two-year colleges FY 1995-2002 DD Model



Source; NJ Archives Data FY 1998-2002; Common Core of Data, NCES FY 1998-2002

The DD model also suggests that Abbott IV increased the number of students in Abbott districts to be employed after high school as compared to working-class districts between school year 1997-98 and 2001-02 ($p<0.05$). The positive relationship for employment of students from Abbott districts after high school persists when low socioeconomic districts are combined with working class districts as the comparison group ($p<0.05$).

Table 5-5 The estimated effects of Abbott v. Burke on Post High-School Plans FY 1995-2002 DD Model

	Two Year College		Four Year College	College (2 or 4 yr)	Other Post-Sec Educ	Military	Employed	
Panel A Low SES Districts	6.987	**	0.747	7.733	-1.398	-0.626	2.994	
Sample size	321		321	321	321	321	321	
Panel B Working Class Districts	6.199	**	-1.973	4.114	-0.892	-0.072	2.709	*
Sample size	315		315	315	315	315	315	
Panel C Low SES and Working Class Districts	7.412	***	-1.018	6.326	-1.256	-0.485	3.157	*
Sample size	459		459	465	459	459	459	
Panel D Low SES, Working and Middle Class Districts	7.187	***	-1.277	5.91	-1.506	-0.492	2.858	
Sample size	649		649	649	649	649	649	

Notes: Each column within a panel is a separate regression.

***p<0.01; **p<0.05; *p<0.1

All specifications include district fixed effects.

Although the coefficient for students attending four-year colleges is positive, there was not a statistically significant relationship between Abbott IV and students attending four-year colleges as compared to low socioeconomic districts. The lack of a statistically significant relationship between Abbott IV and students attending four-year colleges persists when the comparison group is working class districts; the combination of low socioeconomic and working class districts; and the combination of low socioeconomic, working-class, and middle class districts.

It is interesting to note that results for students attending two-year colleges from Abbott districts under the CITS model were different than those from applying the DD model. The CITS model implies that Abbott IV did not have any effect on students attending a two or four-year

college in Abbott districts when compared to low socioeconomic districts; working class districts; low socioeconomic and working class districts; or to the combination of low socioeconomic, working, and middle-class districts as there is not a statistically significant relationship with any of these panels.

Table 5-6 The estimated effects of Abbott v. Burke on Post High-School Plans (1995-2002) CITS Model

	Two Year College	Four Year College	College (2 or 4 yr)	Other post-sec	Military		Employed	
Panel A Low SES Districts	1.738	-0.038	1.4	0.915	1.064	*	3.937	**
Sample size	321	321	321	321	321		321	
Panel B Working Class Districts	2.54	-0.752	.980	-0.154	1.178	*	-1.193	
Sample size	315	315	315	315	315		315	
Panel C Low SES and Working Class Districts	2.211	-0.692	1.257	0.038	1.142	*	-2.947	**
Sample size	459	459	465	459	459		459	
Panel D Low SES, Working and Middle Class Districts	2.542	-0.580	1.962	-0.219	1.416	**	-2.328	*
Sample size	649	649	649	649	649		649	

Notes: Each column within a panel is a separate regression. All specifications include district fixed effects.
***p<0.01; **p<0.05; *p<0.1

The CITS model indicates that Abbott IV increased the number of students in Abbott districts joining the military as compared to low socioeconomic districts (p<0.1). The CITS model also suggests that Abbott IV increased the number of students in Abbott districts joining the military as compared to working class districts (p<0.05). The CITS model suggests that Abbott IV increased the number of students in Abbott districts joining the military as compared

to low socioeconomic and working-class districts ($p<0.05$). Furthermore, the CITS model suggests that Abbott IV increased the number of students in Abbott districts joining the military as compared to the combination of low socioeconomic, working, and middle-class districts ($p<0.05$). Thus, according to the CITS model, there is an increasing trend of students in Abbott districts joining the military subsequent to Abbott IV. However, the DD model did not indicate that there was a statistically significant relationship between Abbott IV and students joining the military between FY 1998-2002 across all comparison groups.

The CITS model suggests that Abbott IV increased the number of students employed directly after high school in Abbott districts when compared to low socioeconomic districts ($p<0.01$). However, the CITS model suggests that Abbott IV decreased the number of students employed directly after high school in Abbott districts when compared to low socioeconomic and working districts ($p<0.05$). Finally, the CITS model suggests that Abbott IV also decreased the number of students employed directly after high school in Abbott districts when compared to and to the combination of low socioeconomic, working class and middle-class districts ($p<0.1$). In contrast, the DD model suggests that the Abbott IV increased the number of students employed directly after high school in Abbott districts when compared to working class districts ($p<0.1$); as well as in comparison to low socioeconomic and working-class districts ($p<0.1$) from FY 1998 to 2002.

Chapter 6: IMPLICATIONS AND RECOMMENDATIONS

Introduction

Coming into this study, my primary purpose was to determine whether Abbott v. Burke and ensuing State reform policies improved the academic performance of at-risk students in Abbott districts as compared to analogous low socioeconomic and working-class districts that are not covered by the court decision. During the course of conducting the study, I came to the realization that the most crucial contribution I can make is to evaluate whether a specific set of programs and reforms, such as intensive early literacy (IEL) programs, are effective for at-risk students in Abbott districts. For example, if the effects of the IEL program include improving student performance in Abbott districts, there is a strong argument that the policy should be mandated for Abbott districts and extended to other low socioeconomic non-Abbott and working class districts throughout the State.

It became apparent throughout my research that the question of whether economically disadvantaged students should receive increased resources shifted to "what works-how is the money being used." The question becomes how are these additional State revenues being utilized? Going forward, the pivot away from the "does money matter" debate toward "what works- how are increased resources being utilized provides a greater opportunity to focus on the efficient use of resources.

While zeroing in on the effects of Abbott v. Burke on education spending, student performance, learning culture, and post High School graduation plans in Abbott districts as compared to analogous low socioeconomic and working-class districts, I was very surprised by fluctuations in data that may signify competitive effects of the court decision. I discuss

competitive effects within this chapter, particularly in the section on recommendations for future research and policy.

I was initially determined to get to the bottom of where the money from Abbott v. Burke was actually going, especially in light of media reports that "The problem [in New Jersey schools] is not money. It is leadership and management." Star Ledger, January 7, 2011. In an erroneous supposition, I initially believed that increased resources were not reaching students in the Abbott classrooms as the percentage of current expenditures for instruction and instructional staff support were lower than the national average and all socioeconomic districts in N.J. However, my analysis of expenditures by the various functions revealed that the increased resources from Abbott v. Burke ultimately flowed directly to students in an efficient manner, particularly through student support services.

In this final chapter, I discuss the implication of the results from my four research questions: (1) Did Abbott v. Burke and subsequent reform policies increase funding and resources for economically disadvantaged students in Abbott districts?[102] (2) Have increased resources from Abbott v. Burke directly reached students in the classroom through instruction and student support services?[103] (3) Have Abbott v. Burke and ensuing State reform policies improved the academic performance of economically disadvantaged students as compared to analogous low socioeconomic and working-class districts that are not covered by the court decision? (4) Have a specific set of programs and reforms, including intensive early literacy

[102] The first research question is best approached with several sub-questions:
S (1) How does funding to Abbott districts compare to the highest socioeconomic and upper middle-class districts since Abbott v. Burke (1997)?
S (2) How does funding for Abbott districts compare to low socioeconomic non-Abbott districts, working class, and middle class districts?
S (3) What is the share of state funding for Abbott districts as compared to low income non-Abbott districts, working, and middle class districts?
[103] Expenditures for student support services includes attendance and social work, guidance, health, psychological services, speech pathology, audiology, and other student support services.

programs in the elementary grades mandated by the State pursuant to Abbott v. Burke been effective for at-risk students in Abbott districts? I also discuss the relationship between two theoretical propositions and the research questions as well as how the evolution of one proposition has significantly altered an age-old policy debate.

The first proposition that "the judiciary can bring about social and policy change in education" is bolstered by the line of twenty-one Abbott v. Burke cases in NJ, which in some instances mandated specific public policy reforms. The first research question pertaining to whether Abbott v. Burke increased resources for economically disadvantaged students is directly related to policy change in education in that innovative programs can be funded by additional revenues from the State. The third research question about whether Abbott v. Burke and ensuing State reform policies improved student performance in Abbott districts as compared to low socioeconomic and working-class districts is directly related to policy change in education in that successful policies implemented by Abbott districts can be extended to low socioeconomic and working class non-Abbott districts throughout the State. The fourth research question that focuses on the specific policies that improve student performance in Abbott districts provides the foundation for social and policy change in education that can have ramifications for generations to come.

6.1 Evolution of "Does Money Matter" Debate to the Concept of "What Works—How is the Money Being Used?"

My conceptual framework includes two propositions that are essential for any successful intervention by the courts and State legislatures to influence education policy. These propositions also laid the groundwork for my study. As a direct result of recent advances in research techniques and methods used in this study, one of the propositions has undergone a significant transformation.

In a transformation of monumental proportions, the second proposition that "money does matter to improve the education of economically disadvantaged students" evolved into the concept that "what works—how is the money being used". The proposition can be instrumental in improving the education of all economically disadvantaged students across the State. This transformation is based in part on the fact that quasi-experimental research designs to analyze statewide finance reforms are being used with increasing frequency. The quasi-experimental statistical methods include difference-in-differences (DD), which I apply in my study.[104] There are several recent studies such as Lafortune, Rothstein, and Schzenbach (2016); Jackson, Johnson, and Persico (2016); and Downes and Zabel (2009) that also utilized the DD estimation strategy to investigate whether student finance reforms improve student outcomes. The quasi-experimental research designs are more rigorous than the traditional education production function studies.

My study provides some substantive reasons and examples as to why the "does money matter" debate in proposition 2 has evolved into the concept of "what works—how is the money being used." In an excellent example of focusing on how additional resources are used, the DD

[104] Other quasi-experimental statistical methods include fixed effects (FE), regression discontinuity (RD), and instrumental variables (IV).

model suggests that the IEL program increased fourth grade reading proficiency scores of the Abbott districts who were both "high and medium implementers" and "low implementers" of this policy as compared to low socioeconomic districts; working class districts; and middle-class districts, or any combination thereof. When a team of Columbia University professors unanimously insisted during the defense hearing that I make Abbott districts who were "low implementers" of the IEL policy the treatment group, I was initially skeptical of the results the DD model would show. The fact that "low implementers" of the IEL policy increased fourth grade reading proficiency levels as compared to low socioeconomic districts; working class districts; and middle-class districts, or any combination thereof means that this program is the perfect example of discovering a policy that answers in the affirmative "what works—how is the money being used". Based on the results that show there is a statistically significant positive relationship between all Abbott districts instituting the IEL program and improving fourth grade reading proficiency levels, the New Jersey Department of Education should prioritize implementation of the IEL program across all Abbott districts. Furthermore, the Department of Education should consider expanding the IEL program to non-Abbott low socioeconomic districts and working-class districts.

In another example of focusing on "what works—how is the money being used" is illustrated by my finding that the DD model demonstrates that Abbott reduced student/teacher ratios in Abbott districts as compared to low socioeconomic districts; working class districts; and the combination of low socioeconomic, working class, and middle-class districts between FY 1998 to FY 2002. The fact that the student teacher ratio in the Abbott districts steadily declined from the Abbott v. Burke (1997) decision from FY 1998 through FY 2013, with the exception of an upturn in FY 2008, demonstrates that Abbott districts allocated revenues in a manner that

would directly lower the student/ teacher ratio. Furthermore, the fact that Abbott districts consistently had the lowest student teacher ratio from FY 1998 to FY 2013, as compared to other all other socioeconomic districts with the exception of the highest socioeconomic districts, indicates that the Abbott districts utilized the additional State funding to reduce the student/ teacher ratio.

6.2 Implications of my findings-Resources from Abbott v. Burke (1997) (RQ 1)

In response to my first research question "Did Abbott v. Burke and subsequent reform policies increase funding and resources for economically disadvantaged students in Abbott districts?" the answer is a resounding "Yes." As I expected, Abbott v. Burke had a strong positive effect on education spending from the time the seminal case was decided in 1997 up until to the present date. The consistent increase in current expenditures per pupil across the Abbott districts in excess of that measure in the highest socioeconomic districts and upper middle class districts[105] in N.J. subsequent to Abbott v. Burke provides a positive response to the first sub research question within RQ 1, "How does funding to Abbott districts compare to the highest socioeconomic and upper middle-class districts since Abbott v. Burke (1997)?" The leading case of Abbott v. Burke and subsequent reform policies increased funding for economically disadvantaged children in Abbott districts.

The increase in current expenditures per pupil subsequent to the 1997 court decision is directly attributable to the New Jersey legislature following the original holding of Abbott v. Burke that students in twenty-eight (28) "special needs" districts must receive the same funding per pupil as students in the two highest socio-economic district factor groups in the State. 149

[105] The only exception is that expenditures per pupil in the upper middle class districts exceeded the Abbott districts in the 2012-13 school year.

N.J. 145 (1997) (Abbott IV). New Jersey remains compliant with the holding of Abbott IV in recent years, although in FY 2017 mean current expenditures per pupil in the highest socioeconomic districts were 2.0 percent higher than Abbott districts; and in FY 2018 were 4.1 percent higher than Abbott districts. In FY 18, mean current expenditures per pupil were .4 percent higher in upper middle-class districts than Abbott districts.

At first blush, the second sub research question within RQ1, "How does funding for Abbott districts compare to low socioeconomic non-Abbott districts, working class, and middle-class districts" appears to be easily responded to in that mean expenditures per pupil were higher in Abbott districts as compared low socioeconomic districts, working class, and middle class districts from FY 96 to FY 18. The positive difference in current expenditures per pupil between Abbott districts and low socioeconomic districts as well as working class districts initially ascended in FY 03 and increased precipitously, reaching the peak by FY 08. However, between FY 08 and FY 13, the difference in current expenditures per pupil in low socioeconomic, working, and middle-class districts as compared to Abbott districts began to dissipate for several reasons. As previously mentioned, the Abbott XX decision in 2009, wherein the court held that the funding scheme of SFRA based on the socioeconomic needs of each individual student, rather than geography, satisfied the requirements of the thorough and efficient clause of the New Jersey constitution, increased State funding for all economically disadvantaged students across those sub-set of districts. Abbott v. Burke, 199 N.J. 140 (2009) (Abbott XX). See infra p.91. The increase in current expenditures for low socioeconomic, working class, and middle- class districts were sustained for several years notwithstanding that the New Jersey Supreme Court modified the Abbott XX decision in May, 2011, by ordering New Jersey to provide $500 million

more to only the urban Abbott districts in the 2011-12 school year. Abbott v. Burke, 206 N.J. 332 (2011).

In an unexpected finding, the gap in current expenditures per pupil between Abbott and low socioeconomic districts was reduced to 7.3 percent by FY 18. Furthermore, the gap in current expenditures per pupil between Abbott and working-class districts diminished to 4.1 percent by FY 18. Finally, by FY 18 the gap in current expenditures per pupil between Abbott and middle-class districts was reduced to 4.0 percent.

The third sub research question within RQ1, "What is the share of state funding for Abbott districts as compared to low-income non-Abbott districts, working, and middle-class districts?" has profound ramifications for all economically disadvantaged and middle-class students across New Jersey. As the New Jersey State School Board Association points out "The State derives what is an adequate budget; then determines how much equalization aid can be provided. The difference is left to the school district to address through the local cost share." (New Jersey State School Board Association, 2020).

State equalization aid can be ascertained on a district level by examining the State revenues for elementary and secondary schools. For example, in FY 18 State revenues for elementary and secondary schools accounted for 80 percent or more of total revenues in nineteen Abbott districts (FY 18 School District Finance Survey, infra p. 2, 52). In comparison, there were not any low socioeconomic nor any working-class districts that received 80 percent or more of total revenues for education from State aid. As previously mentioned, the majority of low socioeconomic districts (twenty-one) received between 50 to 59.9 percent of revenues from State aid. The majority of working-class districts (twenty-four) received between 40-49.9 percent revenues for education from State aid. Furthermore, in FY 18 thirty Abbott districts received a

higher percentage of State revenues for elementary and secondary schools than the state average of 43 percent as well as the national average of 47 percent.

The local cost share, or local fair share is significantly higher in low socioeconomic, working class and middle-class districts, as compared to Abbott districts. Going forward, the question is whether low socioeconomic, working class and middle-class districts can provide a "thorough and efficient education" based on funding that is primarily drawn from the local fair share. The State policy of providing thirty-one Abbott districts in excess of 50 percent of total State aid for K-12 education may not be sustainable in the long term, because low socioeconomic, working-class and middle-class districts may not be able to raise sufficient funds by accessing their local fair share.[106]

If overall State aid for education remains level, any policy initiative that provides for a reduction in State aid for Abbott districts could be utilized to increase equalization aid to low socioeconomic, working class and middle-class districts. The increase in State equalization aid could be utilized by these districts to reduce their local fair share. A policy initiative that increases State aid to low socioeconomic, working class and middle-class districts would be more equitable for students across all socioeconomic districts in New Jersey.
Subsequent to Abbott v. Burke, improving the education of economically disadvantaged students in New Jersey revolves around innovation, efficiency, and management; rather than the sufficiency of resources.

[106] In 2020, $4.73 billion (54 percent) in State aid is currently allocated to thirty-one Abbott districts. The equalization aid available to all non-Abbott districts amounted to $3.98 billion, or 46 percent of total State aid.

6.3 Implications of my findings: Funds Reaching Students in the Classroom (RQ2)

The transformation of proposition 2 into the concept of "what works—how is the money being used' is also directly related to my second research question "Have increased resources from Abbott v. Burke directly reached students in the classroom through instruction and student support services? The response to the second research question is surprising in some respects. The fact that Abbott districts are expending more on student support services per pupil in FY 17 than all other socio-economic districts across the State in raw dollars ($2,477) and on a percentage basis (12.7 percent) indicates that increased resources from Abbott v. Burke directly reach students in the classroom through enhanced student support services.

My initial premise that increased resources from Abbott v. Burke were not reaching students in the classroom was erroneous. Prior to conducting this study, I was under the impression that the total amount of money that actually makes it into the classroom is encompassed by the sum of instruction and instructional staff support expenditures. However, upon reflection, expenditures for student support services also directly flow to students. It is important to note that expenditures for student support services includes attendance and social work, guidance, health, psychological services, speech pathology, audiology, and other student support services (Cornman, Ampadu, Wheeler, Hanak, and Zhou, 2019, pg. B-6).

I initially assumed that increased resources from Abbott IV were not reaching students in the classroom because expenditures for instruction and instructional staff support on a percentage basis were sizeable expenditures but trailed both the national average and all other socio-economic districts within New Jersey. As previously mentioned, 58 percent of current expenditures went to instruction in Abbott districts, as opposed to 61 percent in low socio-economic non-Abbott districts and 60.3 percent in working class districts in FY 17. I considered

the difference of 3 percent ($700) being earmarked for instruction current expenditures between Abbott and low socioeconomic districts to be significant.

In making this assumption, I also relied on the fact that in FY 17, instruction and instructional staff support expenditures accounted for 62 percent of current expenditures in Abbott districts. In comparison, in FY 18, on a national basis 65.4 percent of current expenditures were spent on instruction and instructional staff support. This figure also trailed behind the percentage of current expenditures spent on instruction and instructional staff support in all socioeconomic districts.[107] However, general public perception sees the cost of instruction and instructional staff expenditures, and student support services as a debatable issue.
The increased resources from Abbott IV were allocated to student support services, rather than instruction and instructional staff support. As previously mentioned, in FY 17 the mean expenditure of $2,477 for student support services in Abbott districts was the highest across all socioeconomic districts within the State (see infra p. 111).[108] The Abbott districts also spent the highest percentage of current expenditures on student support services as compared to all socioeconomic districts (see infra p. 111). There are multiple risk factors for economically disadvantaged families (Jensen, 2016, p.6). Expenditures for student support service are often targeted to students with multiple risk factors. Thus, increased expenditures for student support services enhances the ability of students in poverty to learn.

My research reveals that increased funds from Abbott v. Burke reach the students directly in the form of higher expenditures per pupil for student support services in conjunction with

[107] The percentage of current expenditures spent on instruction and instructional staff support was 64.2 percent in low socioeconomic districts, 63.3 percent in working class districts, 63.4 percent in middle class districts, 63.2 percent in upper middle-class districts, and 64 percent in the highest socio-economic districts.
[108] Low socioeconomic districts expended $1,989 per pupil, or 10.5 percent; working class districts expended $1,988 per pupil, or 11 percent; middle-class districts expended $2,034 per pupil, or 11.1 percent; upper middle-class districts expended $2,175 per pupil, or 11.4 percent; and highest socio-economic districts expended $2, 358 per pupil, or 11.8 percent of current expenditures on student support.

expenditures per pupil for instruction and instructional staff support services that are slightly lower than other socioeconomic districts. The implication of this finding is that Abbott students have a higher level of need for social work, guidance, health, psychological services, and other student services than higher socioeconomic districts within the State. These student support services in Abbott districts must be augmented with instructional need and instructional staff support services. For example, science of reading interventional approaches can be utilized in conjunction with increased student support services (Torgesen, et al, 2009). This finding is also consistent with prior research that Abbott students face formidable obstacles in economically disadvantaged communities (New Jersey Department of Education, 1998).

6.4 Implications of my findings: Effects of Abbott v. Burke (1997) on Student Performance and Learning Environment (RQ 3)

Does Abbott v. Burke make a difference for at-risk students? If my third hypothesis that "the equity court decision of Abbott v. Burke and ensuing State refo policies improved the academic achievement of economically disadvantaged students in the Abbott districts as compared to low socioeconomic and working-class districts" is proven to be true, the policy initiatives that worked will guide education policy and implementation for years to come. Twenty-two years after the seminal court decision, the paradigm has shifted way from simply providing more resources to developing strategies that provide equal opportunities for disadvantaged students.

After an exhaustive study, wherein I built one of the most comprehensive district-level data bases in the nation and utilized over twenty-five measures, I find that Abbott v. Burke as an intervention has strong positive effects on education spending, student performance (in the early

stages), and the learning environment. In New Jersey, increased funding and reform policies pursuant to the line of Abbott v. Burke court decisions has improved the academic performance of economically disadvantaged student in the Abbott districts as compared to low socioeconomic and working-class non-Abbott districts. My finding can have a profound influence on public policy in that by applying the strategy of determining "what works—how is the money being used" to the positive effects in student performance, the specific learning programs can be identified and implemented across all economically disadvantaged districts.

Starting with the learning environment, it is not surprising that the DD model suggests that Abbott reduced student/teacher ratios in Abbott districts as compared to low socioeconomic districts; working class districts; and any combination of low socioeconomic, working class, and middle-class districts between 1998 and 2002. The descriptive results confirm that the Abbott districts consistently had the lowest student/teacher ratios from FY 1998 to FY 2015, as compared to other all other socioeconomic districts across the State. In many instances, Abbott districts utilized the additional resources to add more teachers.

The finding that the DD model suggests that Abbott IV reduced elementary class size in Abbott districts compared to the combination of socioeconomic, working class, and middle-class districts between 1998 to 2002 is be expected as current expenditures per pupil soared from $9,324 in FY 1996 to $14,170 in FY 2003 (see table 4-1 infra). However, the finding that the DD model suggests that Abbott IV did not have any effect on elementary class size of Abbott districts as compared to low socioeconomic districts as there is not a statistically significant relationship between 1998 and 2002 is rather surprising as increased resources for Abbott districts are presumably used for policy initiatives such as reducing class size.

Other than current expenditures per pupil and the student teacher ratio, the impact of Abbott IV on the learning environment between FY 1998 and FY 2002 is questionable in light of the foregoing finding that the court decision did not have any effect on elementary class size of Abbott districts nor attendance rates as compared to low socioeconomic districts. Furthermore, the finding that Abbott IV had a slight negative effect on the attendance rates of students in Abbott districts as compared to working-class districts; and to the combination of low socioeconomic and working class districts demonstrates the decision did not spur attendance rates. Finally, the finding that Abbott IV did not have any effect on elementary school suspensions of students in Abbott districts as compared to low socioeconomic districts indicates that the case did not impact student discipline.

The finding that the DD model suggests that Abbott IV increased fourth grade reading proficiency scores of Abbott districts as compared to low socioeconomic districts from 1998-2002 is very promising for families in poverty and advocates of greater school finance equity. The finding that the DD model suggests that Abbott IV increased fourth grade reading proficiency scores of Abbott districts is very pervasive in that it holds up as compared to working class districts; to low socioeconomic and working-class districts; and to the combination of low socioeconomic, working, and middle-class districts.

The improvement in student performance arising from Abbott v. Burke is further accentuated by the finding that the DD model suggests that Abbott IV increased fourth grade math proficiency scores of Abbott districts as compared to low socioeconomic districts. The positive effects of Abbott v. Burke on fourth grade students are sustained by the finding that the DD model also suggests that Abbott IV increased fourth grade math proficiency scores of Abbott districts as compared to low socioeconomic and working class-districts. Furthermore, the DD

model shows that Abbott IV increased fourth grade math proficiency scores of Abbott districts as compared to the combination of low socioeconomic, working class, and middle class districts.

My findings confirm prior literature which reveals students in Abbott districts showed demonstrable improvement from 2001 to 2005 on fourth grade math and reading tests, with the result that the Abbott to non-Abbott achievement gap seems to be closing in the 4th grade. (Goertz and Weiss 2007). Alexandra Resch used district level averages on the 1994-2001 New Jersey High School Proficiency Test to analyze Abbott v. Burke. She found a significant positive impact of the Abbott policy on 11th grade achievement for minority students in the Abbott districts. (Resch, 2009, p, 94).

The Abbott v. Burke line of cases and School Funding Reform Act of 2008 featuring the adequacy budget have effectively marshaled the resources to implement one of the most promising education programs within a generation, particularly for elementary school students in Abbott districts. The findings that suggest Abbott IV increased fourth grade reading and math proficiency scores of Abbott districts as compared to low socioeconomic districts provide solid evidence that increased resources can improve student performance. The implication of my findings pertaining to the improvement of fourth grade reading and math proficiency scores in Abbott districts is that increased funding and resources can make a difference for all economically disadvantaged students, across all low socioeconomic districts to working-class districts.

The narrative appears to change as Abbott students reach the latter stages of junior high school. By the time Abbott students are entering high school the once promising education program in elementary school based on increased resources from Abbott v. Burke appears to attenuate. The finding that the DD model suggests that Abbott IV did not have any effect on

eighth grade reading and math proficiency scores from FY 1999 through FY 2002 as compared to low socioeconomic districts due to lack of a statistically significant relationship could be based on several factors. First, it is possible that the treatment effect of Abbott v. Burke begins to dissipate somewhere between fourth and eighth grade, especially in light of the fact that the IEL program is geared toward students in first through fourth grade. Second, there may also be data limitations which could have influenced the results in that proficiency levels on eighth grade standardized assessments first became available for the 1998-99 school year. Abbott v. Burke (Abbott IV) was adjudicated by the New Jersey Supreme court in May of 1997. The year for Abbott districts to ramp up instruction and support services for students with increased resources occurred in 1997-98. As previously mentioned in the Data section, New Jersey tested 8th grade students for the first time in school year 1998-99. The cohort of eighth grade students being tested commencing in the 1998-99 school year did not have the benefit of the IEL, nor enhanced instruction and support services programs being offered in first through fourth grade.

The measures of academic achievement at the high school level in Abbott districts are sending mixed signals. On one hand, the promising effects of Abbott v. Burke on fourth grade academic achievement begin to attenuate in some respects by the time students reach high school. The finding that the DD model implies that Abbott IV did not have any effect on proficiency levels of eleventh grade reading or math scores of Abbott districts as compared to low socioeconomic districts between FY 1998 and FY 2002 demonstrates that the improvement in student performance in Abbott districts may be limited to the early stages of learning. In fact, the CITS model suggests that Abbott IV has a slight negative effect on eleventh-grade math scores in Abbott districts as compared to low socioeconomic districts between 1995 and 2002.

The finding that the DD model suggests that Abbott IV had a negative effect on students graduating with the class in Abbott districts as compared to low socioeconomic districts; working-class districts, the tandem of low socioeconomic and working class districts; or the combination of low socioeconomic, working class and middle class districts demonstrates that the increased resources from Abbott IV have not improved the rate of Abbott students graduating with the class between FY 1998 and FY 2002. Furthermore, the CITS model suggests that Abbott IV had a negative effect on students graduating with the class in Abbott districts as compared to low socioeconomic districts; working class districts; low socioeconomic and working class districts; or the combination of low socioeconomic, working class and middle class districts between 1995 and 2002.

On the other hand, the finding that the CITS model suggests that Abbott IV increased SAT verbal and math points in Abbott districts as compared to working class districts between 1995 and 2002 outright challenges the theory that the initial academic success of Abbott students in elementary school is attenuated by high school. The Abbott students appear to be improving their college readiness aptitude as compared to the working-class districts between 1995 and 2002. However, it should be noted that the aforementioned positive effects of Abbott v. Burke on SAT scores of Abbott districts does not appear to hold up to the other comparison groups. The lack of a statistically significant relationship between and Abbott v. Burke and mean verbal or math SAT scores in Abbott districts as compared to low socioeconomic districts sends a mixed message on whether Abbott IV works for at-risk students.

Regardless of the mixed signals set forth above, overall student performance by Abbott students in high school cries out for policy interventions that help students reach their academic potential-be it tutoring, mentoring, counseling, or special social programs. Michael Rebell's

point that, “Increases in education spending could have diminishing marginal impacts, meaning that to obtain learning gains of the same magnitude, even higher increases in spending might be required,” may well apply to students in ninth through twelfth grade. Up to this juncture, the majority of programs mandated by Abbott v Burke have focused on pre-K and early literacy programs. Policy makers would be well advised to focus on programs that stimulate the interest and involvement of ninth through twelfth grade students, even if the costs are relatively high.

Post High School Plans

The finding from the DD model that Abbott IV increased the number of students in Abbott districts enrolling in two-year colleges as compared to low socioeconomic districts between school year 1997-98 and 2001-02 means that Abbott students are more cognizant of the opportunities to attend college. The fact that this positive relationship between Abbott IV and the number of student enrolling in two-year colleges pervades if the comparison group is working-class districts; the pairing of low socioeconomic and working-class districts; or the combination of low socioeconomic, working-class, and middle-class districts indicates that Abbott students are taking advantage of the opportunity to attend two-year colleges.

The finding from the CITS model show positive coefficients for Abbott students enrolling in two-year colleges, but they are not statistically significant for the comparison groups of low socioeconomic districts; working-class districts; the pairing of those two sets of districts; and the combination of low socioeconomic, working, and middle-class districts (the p value for the comparison group of low SES districts is 0.426 and the combination of all three socioeconomic districts is .207).

6.5 Implication of My Findings: Effectiveness of Specific Programs and Reforms for At-Risk Students in Abbott districts (RQ 4)

The response to the fourth research question "Have a specific set of programs and reforms, including intensive early literacy programs in the elementary grades mandated by the State pursuant to Abbott v. Burke been effective for at-risk students in Abbott districts?" is one of most promising aspects of this study. Invoking my second proposition that has evolved to the question of "what works-how is the money being used," one of my most compelling findings is that the DD model suggests that the IEL program increased fourth grade reading proficiency scores of the Abbott districts who were "high and medium implementers" of this policy as compared to low socioeconomic districts. Thus, the DD model demonstrates that IEL programs instituted by the "high and medium implementers" of Orange, Pleasantville, Elizabeth, Jersey City, Union City, Asbury Park, Bridgeton, East Orange, Irvington, and Newark increased fourth grade math proficiency scores of students in those districts, as compared to low socioeconomic districts.

In a confirmation that the IEL program is effective, the DD model also implies that the IEL program increased fourth grade reading proficiency scores of the Abbott districts who were "low implementers" of this policy as compared to low socioeconomic districts. This finding demonstrates that the balance of Abbott districts who are deemed "low implementers" also increased fourth grade reading proficiency levels by utilizing the IEL program.

Furthermore, the fact that the DD model further indicates that the IEL program increased fourth grade reading proficiency scores of "high and medium implementers" of this policy as compared to working class districts; the tandem of low socioeconomic and working class districts; and the combination of low socioeconomic, working class, and middle class districts

provides solid evidence that the IEL program is an effective policy to implement the holding of Abbott v. Burke. This finding indicates that the IEL programs are keys to improving reading performance of students in Abbott districts as compared to students across the range from analogous low socioeconomic districts to middle class districts.

In summary, the leading case of Abbott v. Burke (1997), the resultant increases in State spending, and specific policies such as the Intensive Early Literacy initiative have a positive association with the academic achievement of economically disadvantaged students. The clear implication from this finding is that the New Jersey Department of Education should prioritize implementation of the IEL program across all Abbott districts and consider expanding the program to non-Abbott low socioeconomic districts and working-class districts.

6.6 Implication of My Findings: Competitive Effects

As previously mentioned in Chapter 4, the Abbott IV decision in 1997 appears to have a steady competitive effect on the overall funding level for low socioeconomic and working-class districts (see infra p.106). The finding that by FY 18, the gap in current expenditures per pupil between low socioeconomic districts and Abbott districts diminished to 7.3 percent demonstrates that low socioeconomic districts significantly closed the spending gap with all socioeconomic districts across the State. The finding that by FY 18, the gap in mean current expenditures per pupil between working-class districts and Abbott districts was down to an astounding 4.1 percent shows that funding for working class districts is commensurate with that of Abbott districts. The implication is that by FY 2018, Abbott v. Burke (1997) is the rising tide that has lifted current expenditures per pupil for low socioeconomic and working-class districts.

Abbott v. Burke (Abbott IV) appears to have had a positive competitive effect on the student teacher ratio in low socioeconomic non-Abbott districts, working-class, and middle-class districts. The finding that the student teacher ratio in low socioeconomic districts initially declined from the ramp-up year in FY 1998 to FY 2003; decreased between FY 2008 and FY 2013, (reversing a peak in 2008); and further declined during the FY 2015 to FY 2018 timeframe demonstrates consistency in lowering the rate over the past twenty years (see infra Figure 4-7; p. 118).

The finding that the student teacher ratio in working-class districts decreased between FY 1998 and FY 2003; as well as between FY 2008 and FY 2013; and remained relatively level from FY 2014 to FY 2018 shows a pattern of lowering the ratio.

Finally, the finding that the student teacher ratio in middle class districts declined from FY 1998 to FY 2003; consistently declined between FY 2008 and FY 2013; and slightly decreased between FY 2014 to FY 2018 indicates middle class districts reduced the student teacher ratio below that of any socioeconomic districts in the past three years, with the exception of upper middle class and the highest socioeconomic districts. The positive competitive effects of Abbott IV on the student teacher ratio has dramatically increased the time that students have with individual teachers in low socioeconomic non-Abbott districts, working-class, and middle-class districts.

6.7 Recommendations for Future Research and Policy

First and foremost, although I built a very comprehensive data base to conduct the DD model, the data on proficiency levels on fourth and eighth grade state standardized assessments in reading and math were only included for 1998-2002. The data base to conduct the DD model should be further populated with district proficiency levels on fourth and eighth grade reading and math state assessments from 2003 to 2018. Although I have previously downloaded this data from the 2011 to 2016, I have not had the opportunity to transfer the data to the DD database. Furthermore, the data for standardized assessment scores for eleventh grades, SAT scores, graduation rates, and post-high school plans must be obtained 2003 to 2018.

Research Competitive Effects of Abbott v. Burke (1997) on Funding and Student Teacher Ratio by Socioeconomic Districts

The competitive effects of Abbott IV on low socioeconomic and working-class districts should be the subject of further research. As extensively discussed in the Statement of Purpose and Chapter 4, Abbott IV ostensibly had a steady competitive effect on the overall funding level for low socioeconomic and working-class districts (see infra p.106). Longitudinal research can be conducted on the level as State revenues for elementary and secondar schools as a percentage of total revenues or education across low socioeconomic and working-class districts.

Research can also be conducted on the competitive effects of Abbott IV on general administration expenditures per pupil in low socioeconomic and working class districts, and school administration expenditures per pupil in low socioeconomic and working class districts. For example, in FY 17, general administration costs encompassed 2.8 percent of current expenditures in working class districts; 3.0 percent in low socioeconomic districts; and 2.0

percent in Abbott districts. In FY 17, school administration expenditures comprised 4.4 percent of current expenditures in working class districts; 3.8 in low socioeconomic districts; and 4.5 percent in Abbott districts.

As previously set forth in the Statement of Purpose and Chapter 4, Abbott IV appears to have had a positive competitive effect on the student teacher ratio in low socioeconomic non-Abbott districts, working-class, and middle-class districts. In the DD context, a special data base would have to constructed wherein the low socioeconomic and working-class districts are designated to be the treatment groups, rather than the comparison groups.

Research Status of District-Level Participation in Intensive Early Literacy Program (IEL)

The "high and medium implementers" of IEL were engaged in the IEL program long before 2003, when New Jersey mandated the IEL comprehensive reading model by promulgating regulations for "Improving Standards-driven Instruction and Literacy in Abbott Districts." N.J.A.C. 6A:10 A. (New Jersey Department of Education, 2004). At this juncture, more research should be conducted to determine exactly when the 12 districts mandated by Abbott X to participate in IEL became fully engaged in the program. Once the exact IEL commencement date is established in each of the twelve districts, a more precise DD estimation can be conducted to analyze the effects of IEL. Furthermore, the DD estimation can be built around the New Jersey Department of Education guidance on the IEL program in 2007 by virtue of issuing "rules …to implement the Abbott v Burke decisions and … ensure that all students in poor urban districts

receive educational entitlements guaranteed them by the New Jersey Constitution."[109] N.J.A.C. 6A:10A-1.1 (2007).

6.8 Policy Recommendations

Scholars such as W. Norton Grubb argue that "Abbott seems more promising as a starting point than the lawsuits that create remedies based on revenues" and cites supplemental programs such as health and social service referral; alternative education and dropout prevention; violence prevention; as well as school-to-work and college transition programs. (Grubb, 2009, p. 265 citing the Abbott Indicators Projects 2006). However, the literature is scant on whether any of these programs have even been attempted.

In light of my findings that Abbott v. Burke as an intervention has strong positive effects on education spending, student performance (in the early stages), and the learning environment, the policy recommendations should focus on determining "what works—how is the money being used." In this manner, specific learning programs can be identified and implemented across all economically disadvantaged districts.

The starting point should revolve around the policies and programs that have been proven to work in New Jersey. Based on the finding that that Abbott IV increased the proficiency levels on fourth grade reading assessments of Abbott districts as compared to low socioeconomic districts between school year 1997-98 and 2001-02, it is highly recommended that programs which focus on early literacy should be prioritized and developed for students in first through fourth grade. Thus, the Intensive Early Literacy (IEL) program should be revived and expanded

[109] The rules apply to Abbott districts and are adopted to ensure that the provision of a through and efficient system of education as guaranteed by the New Jersey Constitution and defined by the Supreme Court in the Abbott Specdecisions.

as the leading policy initiative for all Abbott districts. As previously mentioned, in 2007, the NJ Department of Education defined IEL as a ”means program for children age three through grade three to ensure that all students read at grade level by the end of third grade. The core program includes curriculum and instruction that address the CCCS and the expectations, continuous assessment of students' need; an emphasis on small group instruction in designated learning centers; at least 90 minute uninterrupted literacy block for K to grade three; and a classroom library." N.J.A.C. 6A:10A-1.1

Athough New Jersey mandated the IEL comprehensive reading model for Abbott districts in 2003 by promulgating regulations for "Improving Standards-driven Instruction and Literacy in Abbott Districts," N.J.A.C. 6A:10 A, it is not clear that this regulation is currently being enforced by the NJ Department of Education (New Jersey Department of Education, 2004). The NJ Department of Education should take a more active role in ensuring that Abbott districts are implementing IEL because this program has been proven to improve student performance. The NJ Department of Education should also take a leadership role in offering the IEL program to low socioeconomic and working-class districts.

With regard to education spending, the New Jersey State Legislature, Governor's Office, and Department of Education should focus on reallocating the amount of State aid that is disbursed among Abbott districts, low socioeconomic, and working-class districts. A policy initiative could be crafted that provides for a reduction in State aid for Abbott districts. If the State aid remains level, the reduction in State aid for Abbott districts could be utilized to increase equalization aid to low socioeconomic, working class and middle-class districts. The redistribution of State aid would reduce the local fair share of these districts. The prospective reallocation of State aid could be based on the socioeconomic needs of each individual

student.[110]A policy initiative that increases State aid to low socioeconomic, working class and middle-class districts would be more equitable for students across all socioeconomic districts in New Jersey.

The New Jersey Department of Education should hold an annual public policy conference dedicated to the policies and programs to implement the Abbott v. Burke line of cases. The Abbott conference should be open to administrators, teachers, and instructional staff from Abbott districts, low socioeconomic non-Abbott districts, working-class districts, and middle-class districts. The conference should focus on specific learning strategies that improve the academic performance of economically disadvantaged students. The conference should also focus on budgeting techniques that focus on efficient use of the additional resources that are available from Abbott IV.

6.9 Specific Programs to Implement Abbott v. Burke

The basic parameters of the IEL program should be actively implemented in Abbott districts for students in sixth grade through high school. The core program of IEL that includes curriculum and instruction that address the expectations of junior high school and high school teachers should be implemented. The continuous assessment of students need that is utilized in IEL programs should be applied to all Abbott students. Finally, the emphasis on small group instruction in designated learning centers should be offered for sixth grade through high school

[110] In 2009, the New Jersey Supreme Court held that the funding scheme of SFRA based on the socioeconomic needs of each individual student, rather than geography, satisfied the requirements of the thorough and efficient clause of the New Jersey constitution. Abbott v. Burke, 199 N.J. 140 (2009) (Abbott XX). In 2011, the Supreme Court ordered New Jersey to restore SFRA funding in the amount of approximately $500 million to the urban Abbott districts. The court refused to include the rest of the state's school districts in the funding restoration order. Abbott v. Burke, 206 N.J. 332 (2011) (Abbott XXI).

students. The small group instruction should be augmented with tutoring that provides one-on-one instruction on a weekly basis.

The students currently in sixth grade through high school in Abbott districts should have the opportunity to engage in a mentoring program. The mentoring program should offer advice on career selection, four-year college, two-year college, vocational-training, STEM opportunities, military, or immediate employment.

Abbott districts should offer English Language Learning (ELL) seminars that are open to both students and their parents. Special English classes for ELL students should be offered commencing in sixth grade.

The Abbott districts should also focus on special programs for non-college bound learners. The districts should provide materials, machines, and teacher personnel to re-implement shop and vocational-education training, along with similar increases in technology class. Finally, high schools in Abbott districts should be more engaged in offering special college preparatory courses, AP courses, or IB courses.

Conclusion

The crucial question in this entire study is whether Abbott v. Burke and ensuing State reform policies improved the academic performance of economically disadvantaged students as compared to students in analogous low socioeconomic and working-class districts that are not covered by the court decision? I find that Abbott v. Burke as an intervention has strong positive effects on education spending, student performance (in the early stages), and the learning environment. In New Jersey, increased funding and reform policies pursuant to the line of Abbott v. Burke court decisions improved the fourth grade reading and math proficiency levels of students in Abbott districts as compared to low socioeconomic and working-class non-Abbott districts. My finding can have a profound influence on public policy in that by applying the strategy of determining "what works—how is the money being used" to the positive effects in student performance, the specific learning programs can be identified and implemented across all economically disadvantaged districts.

The most important contribution I can make is to evaluate whether a specific set of programs and reforms, such as intensive early literacy (IEL) programs, are effective for at-risk students in Abbott districts. As previously mentioned, the promising effects of Abbott v. Burke on fourth grade academic achievement begin to attenuate in some respects by the time students reach high school. Some of the components of IEL can be readily applied to junior high school and high school students. Gordon MacInnes stated that IEL involves, "Expand the time for literacy instruction, keep careful track of student progress, adjust instruction to reflect individual needs, surround students with books and words, focus on small groups for most instruction, spend extra time with struggling readers, and support teachers and engage them in making

necessary changes." (MacInnes, 2009). For example, the suggestion to "focus on small groups for most instruction" can certainly be applied to junior high school and high school students. Abbott v. Burke (1997) is the beacon of hope for economically disadvantaged students in that the ensuing policy reforms and initiatives provide a solid foundation to enhance their ability to learn. In a profound transformation in recent years, the public policy question has shifted from "Does Money Matter" to "What Works—How is the Money Being Used?" Going forward, a truly equitable solution is to expand policies that work for at-risk students in Abbott districts to students in low socioeconomic non-Abbott districts, working class, and middle-class districts across the entire State of New Jersey.

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Appendix A: Table of Cases

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